

BIRDS AND NATURE

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A NEW EDITION

PAGE PLATES OF FORTY-EIGHT COMMON BIRDS BY
COLOR PHOTOGRAPHY

A GUIDE IN THE STUDY OF BIRDS AND THEIR HABITS



VOLUME III

COMPLETE IN FIVE VOLUMES WITH 240 PAGE PLATES IN COLORS.
BEING A SCIENTIFIC AND POPULAR TREATISE ON
FOUR HUNDRED BIRDS OF THE UNITED
STATES AND CANADA.



CHICAGO

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NONPAREIL.
(*Passerina ciris*).
Nearly Life size.

The Painted Bunting (*Passerina ciris*)

By Gerard Alan Abbott

Length: $5\frac{1}{4}$ inches.

Range: South Atlantic and Gulf States to Western Texas, north to North Carolina and Illinois and south to Panama.

This beautiful bird is often called by the appropriate peerless name Nonpareil.

Without any exception, these are the most gaudily plumaged North American birds, but their colors have a harshness of contrast that renders them far less pleasing to the eye than many others of our birds. They are often caged, but in confinement soon lose the natural brilliancy of their plumage. Like the Indigo Bunting, they are found in thickets and hedges; their habits seem to be precisely like those of the last species.

Its song is similar to that of the Indigo, but lacking the brilliancy.

The nest is made of grasses, leaves, strips of bark and rootlets, compactly compressed and woven together, situated at low elevations in thickets and low bushes. The eggs are whitish, specked and blotched with reddish brown.

In the South they are favorite cage birds and readily become reconciled to small quarters. Like the Indigo Bunting the male is a strikingly colored bird, but the plumage of the female is plain olive green. One variety spends the winter in Florida but does not seek a more northerly climate until about May.

In their winter haunts they are shy and retiring, remaining in dense shrubbery where the country is not under cultivation. Often while singing the males remain concealed among the foliage and are as difficult to observe as is our yellow-breasted chat. Their song may be favorably compared with that of the Indigo Bunting.

The birds live chiefly upon seeds and berries. Until the young leave the nest, they are fed upon insects and their larvæ. The nests are rather loosely constructed of leaves and stems of grass and are lined with the same material. Low bushes and young trees are the favorite nesting sites, although the birds are sometimes found breeding in the high timber, several nesting at times in a single tree.

Four eggs are laid in May and a second brood is frequently reared in July.

Lazuli Bunting (*Passerina amoena*)

Length, from $5\frac{1}{4}$ to $5\frac{1}{2}$ inches. Male blue above, breast brownish; wing bars white. Female brownish.

Range: Breeds from southern British Columbia, southern Alberta, southeastern Saskatchewan and western North Dakota to southern California and southwestern Texas; winters in Mexico.

The lazuli finch is a near relative of the indigo bunting and the nonpareil,

and its habits are in a general way very similar. There is the same disparity between the dress of the sexes, the color of the female being comparatively dull and homely. The male, however, is a gay plumaged dandy in his suit of turquoise blue, and is likely to surprise the stranger who meets him for the first time, since his colors suggest a tropical setting and are somewhat out of keeping with his surroundings. Notwithstanding his fine feathers, he is not so fond of displaying himself as is his cousin, the indigo bird, but seems to think that the cover of brush and chapparal is essential to his safety. The lazuli finch is a cheerful singer, and its song may be heard at frequent intervals. This song is vivacious and pleasing and the Easterner who hears it for the first time will have no difficulty in guessing at the identity of the chorister, from the resemblance of his lay to the ditty of the indigo bird.

The Chickadee

By Sidney Dayre

"Were it not fore me,
Said a chickadee,
Not a single flower on earth would be;
For under the ground they soundly sleep,
And never venture an upward peep,
Till they hear from me,
Chickadee—dee—dee!"

"I tell Jack Frost when 'tis time to go
And carry away the ice and snow;
And then I hint to the jolly old sun,
'A little spring work, sir, should be done.'
And he smiles around
On the frozen ground,
And I keep up my cheery, cheery sound,
Till echo declares in glee, in glee:
'Tis he! 'tis he!
The Chickadee—dee!"

"And I awaken the birds of Spring—
'Ho, ho! 'Tis time to be on the wing.'
They trill and twitter and soar aloft,
And I send the winds to whisper soft,
Down by the little flower beds,
Saying, 'Come show your pretty heads!
The spring is coming, you see, you see!
For so sings he,
The Chickadee—dee!"

Baldpate (*Mareca americana*)

Range: Breeds from northwestern Alaska, northern Mackenzie, and central Keewatin south to Oregon, Nevada, Utah, Colorado, Kansas, southern Wisconsin, and northern Indiana; winters from southern British Columbia, Arizona, southern Illinois, Maryland, and Delaware south to southern Lower California, the West Indies, and Costa Rica.

The beautiful baldpate is widespread over the fresh-water lakes and ponds of the United States from ocean to ocean. Formerly this bird nested in great numbers in the Western States, but of recent years its nesting grounds have been greatly restricted, and now most of the ducks that visit the United States come from farther north. The baldpate used to be one of the most abundant of ducks, and only recently was to be met with in large flocks, but it has been so greatly reduced in numbers by sportsmen and market gunners, that it can be said to be abundant in only a few localities. When disturbed in ponds near the coast, it has learned to find safety on the ocean, returning to its feeding grounds only when it thinks all danger has passed. It has become one of the wariest of ducks and, like the black duck, has reversed its natural habits in many localities and become a night feeder, devoting the hours of daylight to safeguarding its life by incessant watchfulness. Like most other ducks, the baldpate is fond of wild celery, but as its skill as a diver is small, it essays the role of highwayman, and when the canvas-back or redhead appears on the surface with a bill full of the coveted grass, the fruit of honest toil, it snatches the booty and makes off with it.

My Valentine

By Saidee Gerard Ruthrauff

A valentine was offered me on Valentine's fair morning.

'Twas silver broidered on with gold, and jewels its adorning.

'Twas silver, leaping to the sky, in golden showers returning

With diamond flashings, sheen of pearls, and flame of ruby burning.

'Twas sweet as heart's first conscious love, 'twas glorious as knowing

That after years, a heart true-tried, is still with true love glowing.

It was a lark's love song to me, on Valentine's fair morning,

'Twas silver, broidered on with gold, and jewels its adorning.

A sweeter token you'll not find in heart of loved or lover,

Nay, though around the world you go and search it through and over!

The Northern Shrike (*Lanius borealis*)

By Edward B. Clark

Length: Ten inches.

Range: Northern North America; south in winter to middle of United States.

Food: Insects, grasshoppers, lizards, mice, shrews, etc.

One has to have something of the savage in him to enjoy thoroughly the study of the shrike. As a matter of fact, the close daily observance of the bird involves some little sacrifice for the person whose nature is tempered with mercy. The shrike is essentially cruel. It is a butcher pure and simple, and a butcher that knows no merciful methods in plying its trade. More than this, the shrike is the most arrant hypocrite in the whole bird calendar. Its appearance as it sits apparently sunning itself, but in reality keeping a sharp lookout for prey, is the perfect counterfeit of innocence. The northern shrike is no mean vocalist. Its notes are alluringly gentle, and to paraphrase, "It sings and sings and is a villain still."

There is one compensation beyond the general interest of the thing for the student who has to endure the sight of the sufferings of the shrike's victims in order to get an adequate idea of its conduct of life. The redeeming thing is found in the fact that in the winter time the great majority of the shrike's victims are the pestilential English sparrows, whom every bird-lover would be willing to see sacrificed to make a shrike's supper, though he might regret the attending pain pangs.

My own observations of the shrike have been limited to the city of Chicago and to the fields immediately beyond its walls. For those unfamiliar with the subject it may be best to say that in the winter season the shrike is abundant in the parks of the great smoky city by the lake, and that not infrequently it invades the pulsing business heart of the town. No one ever saw the placidity of the shrike disturbed in the least. It will perch on the top of a small tree and never move so much as a feather, barring its tail, which is in well-nigh constant motion, when the clanging electric cars rush by or when the passing wagons shake its perch to the foundation.

The northern shrike reaches the city from its habitat beyond the Canada line about the first of November. For four years in succession I saw my first northern shrike of the season on November 1st, a day set down in the church calendar for the commemoration of "All Saints." It is eminently in keeping with the hypocritical character of Mr. Shrike, sinner that he is, to put in an appearance on so holy a day. From the time of his coming until late March, and sometimes well into April, the shrike remains an urban resident and harries the sparrow tribe to his heart's content.

As far as my own observation goes, the northern shrike in winter does not



GREAT NORTHERN SHRIKE.

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put very much food in cold storage. I have never seen many victims of the bird's rapacity impaled upon thorns. Perhaps I should qualify this statement a bit by saying that I have never seen many victims hanging up in one place. I have watched carefully something like a score of the birds, and while every one occasionally hung up one of its victims, there was nothing approaching the "general storehouse" of food, so often described. It is my belief that this habit of impaling its prey upon thorns or of hanging it by the neck in a crotch is one that is confined largely to the summer season, and especially to the nesting period.

The northern shrike has been said by some writers to be a bully as well as a butcher. I have never seen any evidence of this trait in its character. It does not seem to care for what some small human souls consider the delight of cowing weaker vessels. When the shrike gives chase to its feathered quarry it gives chase for the sole purpose of obtaining food. While the bird is not a bully in the sense in which I have written, it displays at times the cruelty of a fiend. It has apparently something of the cat in its nature. It delights to play with its prey after it has been seized, and by one swift stroke reduced to a state of helplessness.

Every morning during the month of February, 1898, a shrike came to a tree directly in front of my window on Pearson street, Chicago. The locality abounded in sparrows, and it was for that reason the shrike was such a constant visitor. The bird paid no attention to the faces at the window, and made its excursions for victims in plain view. The shrike is not the most skilled hunter in the world. About three out of four of his quests are bootless, but as it makes many of them it never lacks for a meal. The Pearson street shrike one day rounded the corner of the building on its way to its favorite perch, and encountering a sparrow midway struck it down in full flight. The shrike carried its struggling victim to the usual tree. There it drilled a hole in the sparrow's skull and then allowed the suffering, quivering creature to fall toward the ground. The butcher followed with a swoop much like that of a hawk, and catching its prey once more, bore it aloft and then dropped it again as it seemed for the very enjoyment of witnessing suffering. Finally when the sparrow had fallen for the third time, it reached the ground before the shrike could reseize it. The victim had strength enough to flutter into a small hole in a snow bank, where it was hidden from sight. The shrike made no attempt to recapture the sparrow. It seemingly was a pure case of "out of sight, out of mind." In a few moments it flew away in search of another victim. The sparrow was picked up from the snow bank and put out of its misery, for it was still living. There was a hole in its skull as round as though it had been punched with a conductor's ticket clip.

It has been my experience that the northern shrike hunts most successfully when it, so to speak, flies down its prey. If it gets a small bird well started out into the open, and with cover at a long distance ahead, the shrike generally manages to overtake and overpower its victim. If the quarry, however, is sought in the underbrush or in the close twined branches of the treetop, it generally suc-

ceeds in eluding the butcher. One of the most interesting incidents of all my bird observations was that of the attempted capture by a northern shrike of a small brown creeper. The scene of the action was near the south end of the Lincoln Park lagoon in Chicago. The creeper was nimbly climbing a tree bole, industriously picking out insects, as is its custom, when a shrike dropped down after it from its high perch on a tree which stood close and overshadowed the one from whose bark the creeper was gleaning its breakfast. The shrike was seen coming. The creeper, for the fraction of a second, flattened itself and clung convulsively to the tree trunk. Then recovering, it darted to the other side of the bole, while the shrike brought up abruptly and clumsily just at the spot where the creeper had been. The discomfited bird went back to its perch. The creeper rounded the tree once more, and down went the shrike. The tactics of a moment before were repeated, the shrike going back to its perch chagrined and empty clawed. Five times it made the attempt to capture the creeper, and every time the little bird eluded its enemy by a quick retreat. It was a veritable game of hide and seek, amusing and interesting for the spectator, but to the birds a game of life and death. Life won. I ever have believed thoroughly that the creeper thought out the problem of escape for itself. The last time the shrike went back to its perch the creeper did not show round the trunk again, but instead flew away, keeping the bole of the tree between itself and its foe. It reached a place of safety unseen. The shrike watched for the quarry to reappear. In a few moments it grew impatient and flew down and completely circled the tree. Then, seemingly knowing that it had been fooled, it left the place in disgust.

Of the boldness of the northern shrike there can be no question. It allows man to approach within a few feet and looks him in the eye with a certain haughty defiance, showing no trace of nervousness, save a flirting of the tail, which is a characteristic of the bird and in no way attributable to fear or uneasiness. One morning early in March, when the migration had just started, I saw two shrikes on the grass in the very center of the ball ground at the south end of Lincoln Park. They were engaged in a pitched battle, and went for each other much after the manner of game cocks. The feathers literally flew. I looked at them through a powerful field glass and saw a small dark object on the grass at the very point of their fighting. Then I knew that the battle was being waged for the possession of an unfortunate bird victim. The birds kept up the fight for fully two minutes. Then, being anxious to find out just what the dead bird was which had given rise to the row, I walked rapidly toward the combatants. They paid no heed to me until I was within twenty feet of the scene of their encounter. Then they flew away. I kept my eyes on the much-ruffled body of the little victim lying on the grass, and walking toward it I stooped over to pick it up. At that instant, as quick as the passing of light, one of the shrikes darted under my hand, seized the quarry, and made off with it. It was an exhibition of boldness that did not fail to win admiration. I did not have the chance to learn what bird it was that had fallen a victim to the shrike's rapacity and had been the cause of that battle royal.

The northern shrike, when it is attempting to capture a mouse, or a small bird that has taken refuge in a bush, hovers over the quarry almost precisely after the manner of the sparrow-hawk. There are few more fascinating sights in nature than that of the bird with its body absolutely motionless, but with its wings moving with the rapidity of the blades of an electric fan. Sharply outlined against the sky, it fixes the attention and rouses an interest that leaves little room for sympathy with the intended victim that one knows is cowering below. A mouse in the open has little chance for escape from the clutches of the hovering shrike. Birds, however, which have wisdom enough to stay in the bush and trust to its shelter rather than to launch out into open flight, are more than apt to escape with their lives. In February last I saw two shrike-pursued English sparrows take to the cover of a vine-covered lilac shrub. They sought a place well near the roots. While flying they had shown every symptom of fear and were making a better pace than I had ever seen one of their tribe make before. The shrike brought itself up sharply in midair directly over the lilac, and there it hovered on light wing and looked longingly downward through the interlacing stems at the sparrows. It paid no heed to its human observer who was standing within a few feet and who, to his amazement, saw an utter absence of any appearance of fear on the part of the sparrows. They apparently knew that the shrike could not strike them down because of the intervening branches. They must have known also that owing to the comparative clumsiness of their pursuer when making its way on foot through and along twigs and limbs, they could easily elude him if he made an attempt at capture after that manner. Finally the shrike forsook the tip of the lilac and began working its way downward along the outer edge of the shrub. When it had approached to a point as near as the sparrows thought was comfortable, they shifted their position in the bush. The shrike saw that the quest was useless unless he could start them to flight. He tried it, but they were too cunning for him, and he at last gave up the chase, the progress of which actually seemed to humiliate him. He flew afar off, where perhaps the prospects of dinner were better.

I once saw a goldfinch in winter plumage escape a northern shrike by taking a flight directly at the zenith. The shrike followed the dainty little tidbit far up, until the larger bird was only a speck and the little one had disappeared entirely. The shrike apparently could neither stand the pace nor the altitude, and the watchers, with whom the goldfinch was the favorite in the race, rejoiced with the winner.

Fine feathers do not always make fine birds.

The Purple Finch (*Carpodacus purpureus*)

By Mabel Osgood Wright

Length: 6¼ inches.

Range: Eastern North America, from Atlantic coast to the plains.

These beautiful songsters are common in the northern tier of states and in Canada.

Its song is a loud, long-continued and very sweet warble, which resembles that of the canary.

The family of sparrows and finches, like that of the warblers, blackbirds and orioles, offers such an infinite variety of species and disports so many contradictory fashions in the cut of beaks and tinting of plumage that when we have even a bowing acquaintance with it we feel that we have really entered the realm of bird knowledge.

In addition to its rarity the family of finches and sparrows is the largest of all bird families, numbering some five hundred and fifty species, that inhabit all parts of the world except Australia.

The one point that binds them together which the untrained may discover is the stout bill, conical in shape, with great power for seed-crushing. For, first and last, all of the tribe are seed-eaters, and though in the nesting season much animal food is eaten by adults as well as fed to the young, and tree-buds and fruits are also relished, the tribe of finches and sparrows can live well upon seeds—the seeds of weeds, the seeds concealed between the scales of pine-cones and the pulp-enveloped seeds of wild fruits that are called berries.

This ability to pick a living at any season of the year that the seeded weeds of waste fields and roadsides are uncovered makes what are called "permanent residents" of many species of sparrows, and causes them, when they migrate, to still keep to a more restricted circle than their insect-eating brethren. Also, alas! this seed-eating quality, coupled with beauty of plumage and voice, has made them favorite cage-birds the world over. Happily, freedom has now come to them in this country, together with all our birds, and as far as the law may protect them they are safe, though the latest reports say that small consignments of mockingbirds and cardinals are still smuggled over seas by way of Hamburg.

Run over the list of prominent members of the family of finches and sparrows. Call them by memory if you can: if not, take a book and look them up.

The sparrows are clad in shades of brown more or less streaked, and their dull colors protect them amid the grasses in which they feed and lodge. The birds of brighter plumage are obliged to look out for themselves, as it were, and keep nearer the sky, where their colors are lost in the blaze of light.

First to be remembered are the birds that wear more or less red—the cardinal, the rose-breasted grosbeak, the redpolls, crossbills, the pine grosbeak and the purple finch (who is no more purple than he is blue or yellow).

Then come three birds who would seem original and striking in any family



—the indigo bunting, the southern blue grosbeak and the beautiful painted bunting or nonpareil, gay in blue, gold, red and green plumes.

Red and blue—then yellow must follow as a natural sequence, to complete the primary colors. It is a fact, in the floral kingdom, that the three primary colors never exist naturally without artificial hybridization in one family; thus there are red and yellow roses, but no blue; red and blue verbenas, but no yellow, and so on.

In the sparrow family, however, we have the three primary colors in all their purity,—the American goldfinch clad in pure gold and the dickcissel of the yellow breast, together with the yellow wing and tail marks of the pine siskin, supplying the third color. The towhee bunting stands alone, a blending of brilliant black above, white below, with chestnut sides and red eyes. The chippy, song and field sparrows are typical of the color-protective family type. The white outer tail quills are an index to the vesper sparrow; the same white quills and a white vest name the slate-colored junco. The white-throated sparrow has his name plainly printed under his beak, and the white-crowned sparrow writes his in his white head-stripe, while the rusty brown fox sparrow is known both by size and color.

The purple finch, which, as I have said, is not purple, but, when in full plumage, washed with a rich raspberry-red, deepest on breast, crown and rump, light breast, brownish back, wings and tail, is one of the notable members of the family. Its bill is heavy and round, approaching in size those of the grosbeaks, while in body it ranks with song and house sparrows. Besides having a heavy bill that suggests the grosbeak, it has a way of bristling the feathers of its crown that sometimes gives it the aggressive mien of the cardinal; while its clinking callnote and way of flying in scattered flocks, and the fact that it is with us in winter, cause it to be some times mistaken in the distance for one of the cross-bills.

One would think that, with its rich coloring and the fact that it is a winter resident in many parts of its range, this finch would be a well-known bird; yet many people who have a fair knowledge of our common birds do not seem to know it. Perhaps this is because the females and immature birds, wearing gray and brown stripes, look so very much like their sparrow kin that the rosy-vested bird that sings in the trees, where his colors cannot be seen unless you are directly under him, escapes unnoticed. The change of the young male finch from his northern plain garb to the full crimson costume is interesting as it is deliberate, taking two seasons, the rosy flush not appearing until the end of the second year.

The nesting season is spent from Minnesota and the Middle States northward, and the winter from the borders of the northern state southward to the Gulf. Its choice of a nesting location is very wide, for, like the catbird, it is equally at home in unfrequented and brushy woodlands, and on the borders of home gardens where people are constantly present.

In spite of his unique plumage, it is for his song that this bird has won renown, and it is by his song that he is most readily to be identified. To hear this in its perfection, one must listen for it in May and June; for this finch has not the enduring vocal qualities that endear his cousin, the song sparrow, and give us the perpetual hope that we may hear his voice in every month of the year,—a hope that is usually fulfilled. The finches that have wintered with us begin to warble a little in late March, and the same partial song may be heard in October, after the molt; but the song that suddenly bursts into exuberance, rendering him one of our most conspicuous songsters and recalling many notes of the English chaffinch, belongs to the nesting season.

It is almost impossible to render the song of a bird in syllables so that it appeals to any number of people; for, as bird music is phrased, according to the natural, not the artificial, key that we associate with notation, its translation is a matter of mood, temperament and accord between imagination and ear. To me, when the voice of the crimson finch bursts forth in sudden joyousness, it cries, "List to me, list to me, hear me, and I'll tell you,—you, you!" There must be, however, some similarity between these syllables and the song, because more than once, on endeavoring to name a curiously described bird that I suspected might be this finch, the rapid whispering of these words has completed the clue, by the inquirers exclaiming—"Yes, that is the way the song went." Yet, do the best we can to suggest rhythm of the song, the music of it belongs to the woods and fields, the sky and sun, from which we may not separate it. Forbush says of it: "The song of the male is a sudden, joyous burst of melody, vigorous, but clear and pure, to which no mere word can do justice. When, filled with ecstasy, he mounts in air and hangs with fluttering wings above the tree where sits the one who holds his affection, his efforts far transcend his ordinary tones, and a continuous melody flows forth, until exhausted with his vocal effort, he sinks to the level of his spouse in the tree-top."

These finches travel at times in flocks and are at all times somewhat gregarious, and this trait has made them an easy prey for bird-catchers, and Mr. Forbush tells us that, "If a bird of this species is confined in a trap-cage in spring and exposed in a conspicuous place, most of the purple finches in the neighborhood may be trapped. The greater part of the so-called 'linnets' in many localities have been taken in this way, despite the law and its officers, who are on the lookout for the law-breakers. The birds have been sold in the bird stores or sent to Europe as red or gray linnets. This may account for a local scarcity of this finch in some places where it was formerly common."

The purple finch, though like many others, it hunts for succulent food, apple and cherry blossoms in the spring, has a decided economic value; for, the season through it feeds upon orchard and woodland caterpillars, lice, canker-worms, and when these are out of date it consumes quantities of the seeds of injurious plants, including the noxious ragweed.

Feeding Winter Birds

By I. N. Mitchell

After the long, leafless winter, the heart of man longs for the April rains to chase away the ice and snow.

Those harbingers of spring, the robin, bluebird and meadow-lark are greeted with as genuine a welcome as meets the return of a long-gone friend. After them comes the procession of the birds, slow and straggling at first, then faster and denser as April gives way to May; then a countless throng flitting, darting, flying, sweeping northward, rollicking, singing, visiting as they go. The dullest and busiest of people see robins then! Soon the flood has swept by. The few scores of resident birds become commonplace and the southern migration, beginning in August, goes on so quietly and is so prolonged that it attracts comparatively little attention.

Then comes the most nearly birdless season. A few hardy wayfarers, either winter residents or visitors from the far north, glean from berries, buds and seeds, from wintering insect eggs, and pupae not hidden by the great snow blanket, a more or less satisfactory living.

The increased interest in all birds in recent years, has led, in many places, to a special interest in these winter birds, and efforts are made to attract them about the home not so much for the sake of the birds, for they seldom need human aid, as for the human beings caged in their homes by cold and storm. Then the visit of a chickadee to the window-sill is an event. It gladdens the heart, quickens the sympathies with the outside world and gives a new joy in living.

It is coming to be a fairly frequent sight to see a bird table erected near the home and spread daily or at short intervals with some such materials as grain, cracked corn, cracked nuts, hay seed, crumbs and table scraps, bits of meat especially suet and a dish of water. The table should be fastened to a tree, on a high post out of the reach of cats, or against a convenient window sill. It will be difficult, if not impossible, to keep the English sparrow away except by means of poison or a gun. One would like to be merciful, and let the little beasts feed and welcome were it not for harboring tramps and increasing the troubles of the spring-time nesting.

A suggestion that is worth trying is reported to have worked well in New Jersey and Illinois.

A board six inches wide and two feet long is hinged at one end to the window sill in such a way as to allow the outer end of the board to drop. The board is held about level by a string fastened to its outer end and to the top of the window. In this string, i. e., forming a part of it, a thin or light spiral spring is fastened. The food and water dish are placed at the outer end of the board. When a bird alights the feeding board teeters up and down. The author of the scheme states that other birds will feed at the table, but that the English sparrow will not visit it a second time.

If the lunch counter proves attractive, as it doubtless will, many a happy hour is in store for the friends within while they study at close range, the manners of the chickadee, the red-breasted nuthatch, white-breasted nuthatch, downy and hairy woodpeckers, bluejay, junco, an occasional robin and, maybe, one or two other visitors. The juncos are not so likely to find the table as the others as they are accustomed to search for their food close to the ground. For these birds, as for the white-throated sparrows, white crowned and tree sparrows, the better way is to keep a bit of ground clear of snow and place the food upon it.

Of the last birds mentioned, the junco is the only one that may be expected after severe weather arrives and even the junco will remain, if at all, in the very southernmost part of our state.

To those living in central and northern Wisconsin, may come the pleasure of watching the pine and evening grosbeaks, the red and the white winged crossbills, Bohemian waxwing and snow bunting.

All winter birds must have a good supply of heat-producing food. To most of them suet proves very acceptable. The best way to furnish it is to tie a piece about three inches long in a band of cloth about an inch wide and long enough to go around the limb or trunk of a tree and then fasten the band to a tree near the house

The Willow Ptarmigan (*Lagopus lagopus*)

By W. L. McAtee

Length: About 14 inches.

Food: Seeds and wild fruits.

Range: Breeds from northern Alaska, northern Banks Land, and central Greenland south to eastern Meutian Islands, central Mackenzie, central Keewatin, James Bay, and southern Ungava; south in winter to northern British Columbia, Saskatchewan Valley, Minnesota, Ontario, and Quebec.

To make the acquaintance of the willow ptarmigan in its chosen home one must visit the open tundras on the borders of Bering Sea and the Arctic coast. Though not known to breed south of Labrador, the bird migrates in winter to the St. Lawrence, and occasionally a straggler crosses our own boundary. In Alaska in autumn willow ptarmigan unite in great flocks, numbering thousands, and migrate to the neighborhood of the Yukon and its tributaries, finding there both food and shelter. During the winter ptarmigan play an important role in the life of both the Eskimo and the Indian and are snared and shot in great numbers, often indeed forming the natives' only resource against the ever-recurring periods of want and even famine. On the Kaviak Peninsula the Eskimo have taken advantage of the habitual low flight of the bird—only a few feet above the surface—to net them in a curious way. Nelson thus describes it: "Taking a long and medium fine-meshed fishing net they spread it by fastening cross-pieces to it at



certain distances ; then taking their places just at sunset in early November or the last of October, on a low, open valley or 'swale,' extending north and south, they stretch the net across the middle of this highway, with a man and sometimes two at each cross-piece, while the women and children conceal themselves behind the neighboring clumps of bushes. As twilight advances the net is raised and held upright. Ere long the flocks of ptarmigan are seen approaching, skimming along close to the snow-covered earth in the dim twilight, and a moment later, as the first birds come in contact with the obstacle, the men press the net down upon the snow sometimes securing fifty to sixty birds."

All are white as snow in winter. They are smaller than the prairie chicken and densely feathered to the end of their toes. The ptarmigan is an exceedingly hardy bird, taking refuge in an arctic snow drift as readily as a seal in water. They nest on the ground.

House Finch (*Carpodacus mexicanus frontalis*)

Length, about 6 inches. Grayish brown above, many feathers tinged with red. Below dull white, crown, rump and throat crimson.

Range: Resident in Oregon, Idaho and southeastern Wyoming south to Lower California and Mexico.

The pretty little house finch of the far west is among the most domestic of American birds, and exhibits a predilection for the neighborhood of houses almost as strong as that of the English sparrow. It carols its sprightly lay from the tops of buildings in villages and even cities, and from the shrubbery of lawn and park. So confiding has the bird become that it places its nest in any crack or cranny of house or outbuilding that is large enough for its housekeeping operations. When such convenient and safe retreats are not to be had it builds a bulky nest in a tree or bush.

It is fond of fruit, including pears, cherries, and small fruit, which its strong conical bill enables it to break open with ease. Locally, therefore, it is a good deal of a pest and does much damage to fruit crops, especially where it is numerous. Much, however, can be said in mitigation of its offenses. The seeds of plants, a large proportion of those of noxious weeds, constitute seven-eighths of its food for the year. Plant lice which are notoriously harmful to many trees and plants, also are a favorite diet. So, too, are caterpillars and beetles ; therefore, the balance is decidedly in the bird's favor.

This attractive songster was carried to the Hawaiian Islands years ago and now is numerous in Honolulu and also in the forest on the island of Hawaii where amid brighter and more tropical neighbors it seems curiously out of place, though it sings as often and as joyously as it ever did in its old haunts across the Pacific.

The Purple Martin (*Progne subis*)

By W. Leon Dawson

Length: Eight inches.

Range: United States and southern Canada, south to central Mexico.

Food: Mostly injurious insects.

From time immemorial the garrulous Martin has enjoyed the hospitality of man. Before the advent of the Whites the Indian is said to have prepared for the yearly return of the Martin by trimming the boughs from some saplings hard by the wigwam, and "leaving the prongs a foot or two in length, on each of which he hung a gourd or calabash properly hollowed out" for the birds' accommodation. The white men were quick to follow the example set, and for many years Martin houses, some of them quite ornate, have been a familiar feature of village and country places. These artificial quarters are exclusively used in the prairie states, but here, where timber has been so abundant, a considerable proportion have either never abandoned the ancestral fashion of nesting in hollow trees or old Woodpecker holes, or else have been driven back to it by the English Sparrows. The Martins have suffered much at the hands of these notorious pests, and their great reduction in numbers throughout the state is doubtless due largely to this cause.

Arriving about the middle of March, in the southern part of the state, and from the first to the middle of April in the northern tier of counties, the Martins are apt to wait quietly about their houses until the weather settles. Cold days are spent altogether within doors, and a cold snap at this season is sure to decimate the species, for the bird feeds exclusively upon insects. Their food is not confined to the smaller insects, as in the case of the other Swallows, but bees, wasps, dragon-flies, and some of the larger predatory beetles are consumed.

The birds mate soon after arrival. Old nests are renovated and new materials are brought in,—straw, string, and trash for the bulk of the nest, and abundant feathers for lining. They are very sociable birds, and a voluble flow of small talk is kept up by them during the nesting season. The song, if such it may be called, is a succession of pleasant warblings and gurglings, interspersed with harsh rubbing and creaking notes. A particularly mellow *coo, coo, coo* recurs from time to time, and any of the notes seem to require considerable effort on the part of the performer.

Purple Martins are not only brave in defense of their young, but often go a little out of the way to pick a quarrel with strangers. Hawks are set upon fearlessly and driven out of bounds, and the birds' presence in the barnyard is appreciated on this account. There is besides a running fight to be kept up with Wrens, Bluebirds, and English Sparrows, for possession of the home box. So far as I have been able to observe, however, the birds are not molested by the sturdier Tree Swallows, as is said to be the case in New England. In North-



PURPLE MARTIN.
Life-size.

ern Illinois the nesting houses are habitually shared with the last named species, and the birds seem to have reached a *modus vivendi* on peaceable grounds.

At the end of the breeding season the Martins are no longer confined to the nesting site, but range freely by day, and gather in large companies to roost at night. Sometimes the ridge or cornice of a building is used for this purpose, but oftener the birds resort to some unfrequented woodland or out-of-the-way place. In the summer of 1901 we saw upwards of a thousand of them roosting in the hackberry trees of North Harbor Island, and had reason to believe that the company represented not only the entire population of the Lake Erie Islands, but a considerable number from the Canadian and Ohio mainland as well.

1. Martins prefer a house in the open where the flight is not obstructed.
2. The house should be about fifteen feet high.
3. Rooms should be not less than 5x5 and 6 inches high nor more than 6x6 and 7 inches high. This latter is the Jacobs standard.
4. Rooms should have tight joints. No cracks.
5. Doors should be 2¼ inches square or 2¾ inches in diameter if round.
6. Doors should be one inch above the floor and as far apart as possible.
7. The house should be taken down or closed when the Martins leave it.
8. The house should be put up or opened the last week in March.
9. The house should be get-at-able, either by ladder or by making the pole so as to lower easily.
10. Perches or porches are desirable, the Martins like to sit about the doorways.
11. As all swallows hunt over water, the vicinity of water is the best place for a box.

Some Beneficial Birds and Their Protection

By J. P. Gilbert

The most important enemies to crops are undoubtedly the insect and rodent pests. Insects with their poorly constructed digestive organs eat enormous quantities of food but really digest only a small part of what they eat. It is said to cost the farmer twice as much to feed our insect foes as it does to run our public schools. Mice, rats and other rodents gorge themselves upon grasses and grains, and often cut to pieces and waste far more than they eat. Rats alone are said to destroy one hundred million dollars' worth of property in the United States each year, and mice of all kinds, perhaps, do even more damage than do the rats. These rodents all multiply with alarming rapidity and if not held in check might almost bring on a national calamity.

It is doubtful if anything else is so important as hawks and owls in checking outbreaks of destructive rodents. To keep up their high body temperature and to produce the immense amount of energy needed on their hunting expeditions, birds of prey must devour surprisingly large quantities of food. With but very

few exceptions, this food is made up of mice, rats, gophers, shrews and other rodents. If this food runs out, an occasional hawk learns to eat poultry or birds. This, however, is the exception rather than the rule. All the common land hawks in Illinois except two species, and all the owls seem to prefer these rodents for food. This very necessary work can not be done by cats, as some people believe. If the cat is a mouser at all, she must sit down where mice and rats congregate about the house or barn and there sit down, "like Micawber," and wait for "something to turn up." When rodents come within reach she springs upon them. But this same cat would be useless in a broad field where rodents are scattered. To successfully rid a field of meadow mice and other rodents, etc., requires the services of birds of prey which can quickly fly over the broad fields and on noiseless wing steal upon the pests while they are out of their hiding places. This very necessary service is performed by hawks during the day and by owls in the twilight and by night.

Only two common land-hawks in Illinois do notable injury, as a rule. Two slaty gray hawks with black bars on tail and wing are noted poultry and bird thieves. They are the little sharp-shinned hawk and his "big brother," the Cooper's hawk. The latter bird is almost twice as large as the former.

All other hawks of importance are decidedly beneficial. The sparrow hawk eats large numbers of grasshoppers, beetles, caterpillars, and mice. He is known everywhere by his quick ringing "Killy! Killy Killy!" as he wheels about buildings and parks or hovers upon beating wings above some spot in the field or meadow until he locates the coveted insect or rodent upon which he so speedily descends at the first opportunity. Because of his boldness, this beautiful little hawk is frequently shot by those who do not understand his real value. The large marsh hawk flies low over fields, meadows and lowlands, preferably near woodlands or streams. When his sharp eyes detect some destructive rodent beneath him, he raises his long wings vertically over his back, quickly descends and with outstretched talons seizes the coveted prize. He may also be known by the large white area above the base of the tail. The red-tailed hawk and the red-shouldered hawk are both large and are both unfortunately known as "hen hawks" or "chicken hawks." Only an occasional specimen is known to destroy poultry, and perhaps none of either species would do so if the poultry were kept properly housed or penned up.

Owls even have a better record than hawks. As soon as hawks are driven to roost by the darkness, owls begin their nightly search for nocturnal rodents and insects. These large bright-eyed birds are so quiet and so "mysterious" in their habits that their wild cries or "cold hooting calls" make superstitious people shudder. Unlike other birds, owls see us with both eyes at once. This gives them something of a "human expression" and makes them look wise. But their large eyes serve the owl most effectively in the darkness. By means of them he locates and captures almost fabulous numbers of mice, rats, shrews, meadow mice, insects, etc.

The screech owl is especially fond of insects and mice. When his tremulous cry is heard at night, it is "high time" for mice and rats to hunt their holes, for owls will get them "if they don't watch out." The long-eared owls are also famous mousers. More than a hundred pellets thrown out of the mouth (regurgitated) by a pair of these owls, contained fur in every instance while not one pellet contained feathers. This pair certainly preferred rodents to birds or poultry. The short-eared owls have much the same record as the marsh hawk and may be found in similar situations, hunting much in the same way as the marsh hawk, particularly on dark cloudy days. Barred owls are said to do more good than harm, while the curious looking "monkey faced" or barn owl is the best one of all. A. K. Fisher gathered up the pellets dropped near the nest of a pair of barn owls in the tower of the Smithsonian Institution and found in them 454 skulls of small animals. These skulls represented 225 destructive meadow mice, 179 house mice, twenty rats, twenty shrews, six jumping mice, two pine mice, one star-nosed mole, and one vesper sparrow. Certainly such a record gives the barn owl a right to live. Only the very large "great horned owl" is ever charged with any notable injury, and such charges are very rare. Most people would place him in the class which are neither decidedly beneficial nor harmful. Under the beneficial class, Fisher groups the marsh hawk, red-tailed hawk, red-shouldered hawk, sparrow hawk, barn owl, long-eared owl, short-eared owl, barred owl, screech owl, snowy owl, and several others of less importance.

Under the heading "Harmful Hawks and Owls," Fisher places the sharp-shinned hawk, Cooper's hawk and three others of less consequence in Illinois. But he does not name a single owl as belonging here. He should have left the word "Owls" out of this heading, I believe, since none are really "harmful."

Dr. C. Hart Merriam estimated that each hawk and owl in Pennsylvania is worth at least twenty dollars to the farmer. Certainly, if these birds are so valuable in Pennsylvania, they are much more valuable in a great agricultural State like Illinois where rodents and insects are so very destructive. It seems unreasonable, as Fisher and others have pointed out, that many people will fondle and protect a disease-spreading, bird-eating, poultry-stealing cat, and make war upon our beneficial birds of prey which so effectively do the work for which some people pretend to keep cats. Again, it seems inconceivable that so many people, who get more of the rapid-breeding cats than they want, will haul them out and drop them along the road-side, there almost invariably to go hungry and cold until they learn to catch the beautiful and valuable birds. It is cruel to treat cats thus, while it would be humane to chloroform the surplus stock. This latter procedure applied to the surplus stock and to any cats found eating poultry or birds would very greatly lessen the enormous destruction of valuable birds.

School teachers and their pupils can slowly but surely and permanently put an end to the destruction of valuable birds by teaching in every community the real benefits we derive from them. Many people believe that all birds of prey are bad, just because an occasional individual acquires a perverted appetite. No

one would punish all boys in school because one bad boy did wrong. No one would shoot all dogs, because one dog in the neighborhood killed sheep. But to punish good and bad boys alike, or to kill good and bad dogs alike, is no more foolish or wrong than to shoot good and bad hawks and owls indiscriminately. The rare offender should be destroyed but the great majority of beneficial birds of prey should be protected lest we bring on a scourge of destructive rodents.

If space permitted, I might show how woodpeckers are also too generally misunderstood. With their chisel-like beaks and their extensible, barbed, horny tipped tongues, they expose, spear and extract numberless destructive grubs and borers in forest and fruit trees. Only the sap sucker does notable injury and that very rarely in Illinois.

Woodpeckers, robins and many other valuable birds are frequently charged with serious destruction to cherries and other small fruits. I am convinced that where such occasionally occurs, it is pretty largely our own fault. I have a tree of black mulberries in my yard ripening when my cherries are mature. Birds are numerous about the place, and while on this town lot we usually pick from 100 to 200 gallons of early Richmond cherries, we do not lose one per cent of the crop to the birds. But while the ripening cherries are hanging near by and scarcely a bird may be seen in the cherry trees, the mulberry tree is swarming with many species of birds and a few squirrels literally filling themselves upon the more desirable mulberries. The planting of a few mulberries or wild fruits for the birds to feast upon will usually save the cultivated fruits from injury by birds.

All the birds in Illinois are protected by law with the exception of the English sparrow, sharp-shinned hawk, Cooper's hawk, great horned owl, crow blackbird, crow, bluejay and sap sucker. Boys and girls especially should see to it that the others are protected and encouraged. Bird nests, especially, should not be molested, and everybody should make nesting places for the wrens at least. Bad English sparrows get into "Jenny Wren's" nest while she is out eating insects, and when she returns she does not have a fair show to fight the intruder and run him out. You can make a nest which "Jenny Wren" will like very much and into which the sparrow cannot go. This may be done as follows: Take an old tomato can or corn can and lay a quarter of a dollar down on the end which was not cut open. With pencil, mark around close to the quarter. Now with a pocket knife, cut on this mark until the piece the size of a quarter is almost cut out. Bend this piece down for a lighting board. Now nail the opposite end of this can firmly under the eaves of a house, barn, or outbuilding, or on a tree or post high enough that robber cats cannot disturb and you have a most excellent wren house. Nail up a half dozen such cans, some in the shade and some in the sun, for "Jenny Wren" seems "fickle" in her choice of a nest. Once having obtained a pair of these fine little birds, they will return to you year after year. It will give you a great deal of pleasure to observe the interesting habits of wrens, and to hear their sweet songs, particularly when you think that these songs are made out of the destructive caterpillars which "Jenny Wren" obtains from the gardens, orchards and fields.



BLACK-THROATED WARBLER
Turdus fuscata

The Black-Poll Warbler (*Dendroica striata*)

By F. E. L. Beal

Length: About 5½ inches.

Range: Eastern North America, west to the Rocky Mountains, north to Greenland, the Barren Grounds, and Alaska, breeding from northern New England and the Catskills northward.

Black-polls bring up the rear of the warbler host. And when one has seen them the reason of their tardiness becomes apparent.

Whereas most warblers are restless, impatient, fussy, black-polls are deliberate, decorous, self-contained. They are in no hurry; they have no trains to catch or previously appointed trysts to keep. There is added reason, too, for their leisurely passage, in that their summer camps are pitched far north where spring is tardy also.

In spring the birds seldom arrive before the 15th of May and oftener it is nearer the 20th. The males greatly exceed the females in number, so that one really wonders when the females pass. It is possible that they do not light largely until Lake Erie is traversed, since the species is reckoned rare in the southern part of the state, and only tolerably common in the vicinity of Columbus. For all the birds appear so slow the northern movement is rather rapid, and only an occasional straggler is found after the 25th of May.

It is always with a feeling of sadness that the bird-man views the arrival of these birds which mark practically the close of the warbler season. It has been too short, that period of bursting buds and twinkling wings; but now the leaves are all unfolded, the fairy visitants have stolen away one by one—and here comes black-poll. To be sure his presence befits the season; the bustle of awakening life over, his monotonous droning chimes in accurately with the murmur of bees' wings, and lies softly upon the pulsing tribute of heated air by which the sounds are alike borne heavenward; but somehow we still rebel—youth was all too short!

The warblers are lost to view now if they remain in the tree-tops, but a foggy morning, or some reason less apparent, will sometimes bring them down to feed in the shrubbery. At such times they are quite approachable and one may see how—or at least *when*—they produce that fairy creaking which they call a song. This consists of a series of exactly similar notes uttered rapidly, but in a beautiful musical swell. Many syllables will satisfy the ear, but Mr. Langille has perhaps hit it off the best when he says, "*tree, tree, tree, tree, tree, tree, tree, tree.*"

The black-polls swarm through our state during the fall migrations when they may be observed from the last week in August well into October. It is not probable, however, that any given individual passes so long a time with us, but only that the species occupies such a diverse breeding range that the impelling causes of evacuation are correspondingly diverse in form, and asynchronous in action.

John James Audubon

By Edward Clark

The simple truth is spoken when it is said that the Audubon societies, formed for the protection of wild bird life in America, are carrying forward their work not only in the name of Audubon but in the spirit which was the great naturalist's guide. John James Audubon was a lover of nature. He made his way deep into Mother Nature's heart and there held his place through the long years of his life. Too little is known to most people of this man, who, Frenchman by extraction, was wholly American in love and loyalty.

Some men have said that Audubon was an impractical man, a dreamer. Impractical he was and a dreamer, too, but the world is better for its dreamers. The business man of large affairs looks with a sort of pitying arrogance upon the man who loves the woods rather than the counting house. The man who goes to the woods with a purpose in his heart has chosen the better part. The impractical Audubon will live when those who called him dreamer have been for centuries forgotten.

John James Audubon was born in St. Tammany Parish, Louisiana, about twenty miles from New Orleans, some time between the years 1772 and 1783, the exact date being unknown. He was the son of Admiral Jean Audubon, an officer of the French navy, who served under Rochambeau in the fleet which aided America in establishing her independence. Admiral Audubon, with his wife, were visiting in Louisiana at the time of the birth of the boy who was destined to become the best-known of all American naturalists. The boy Audubon's mother was killed in 1793 in Santo Domingo, where her husband held a large landed property. Madam Audubon lost her life during one of the negro insurrections in that island. Admiral Audubon took his children to France, where he remarried and gave to his youngest son, John James, the only mother he ever knew.

It is impossible in a brief sketch to tell the hundredth part of what there is to be told of Audubon's life. It was filled with interest from the hour of his birth on the shore of Lake Pontchartrain to the hour of his death in Audubon Park on Manhattan Island. From his earliest years Audubon showed a love for nature. His interest and his affection, for both were involved, turned particularly to birds. During his boyhood days in France, as he has said himself, "instead of going to school when I ought to have gone, I usually made for the fields." On these truant excursions he studied such birds, flowers, trees, pebbles and shells as a somewhat limited field of observation gave him opportunity.

Audubon's stepmother loved him devotedly, and she did her best in a kindly, mistaken way to spoil him, but he was of too fine a fiber to be spoiled by stepmother indulgence. His father knew the value of learning, and while he had sense enough to be pleased with all that his boy had accomplished in the way of laying up a store of knowledge of the beasts of the field and the fowls of the air, he knew that in order to make these things tell in the world that other knowl-

edge must bear them company. Audubon in later years was given an occasion to belittle his own education, but he had a greater store of learning than he was given to putting down to his credit. It is perhaps a clue to the nature of the man to say that as a pupil at school he loved geography and loathed mathematics.

Audubon lived in France until he was approaching manhood. Then his father found it necessary to send him back to the United States of America, which Audubon calls "my own beloved country." And he adds, "I came with intense and indescribable pleasure." It is necessary to pass over some of the experiences of the first few months in America. Years before Admiral Audubon, during a visit he had paid to Pennsylvania, had purchased the farm of Mill Grove, where the Perkiomen Creek empties into the Schuylkill River.

In one of Audubon's manuscripts, preserved in printed form in the fine life of the naturalist, "Audubon and His Journals," by Maria R. Audubon, his granddaughter, we read: "At this place (Mill Grove), and a few days only before the memorable battle of Valley Forge, General Washington presented him (Audubon's father) with his portrait, now in my possession; and highly do I value it as a memento of that noble man and the glories of those days."

Miss Audubon, who edited the Journals of her grandfather, puts the Latin word "sic" in parentheses after the naturalist's allusion to the "memorable battle" of Valley Forge. Audubon was a little confused, apparently, as to that for which Valley Forge is noted in American history.

Audubon lived for a long time at the Mill Grove farm, and there he followed almost unremittingly his bird studies. He writes of this time: "The mill was also a source of joy to me, and in the cave, which you, too, remember, where the pewees were wont to build, I never failed to find quietude and delight."

One day, while Audubon was rambling the woods in search of birds, William Blakewell, the owner of an estate adjoining the Mill Grove farm, called at the Audubon house and left an invitation for the young naturalist to come over to see him. Audubon at this time had the prejudices of the Frenchman and also of most of the Americans of that period. Blakewell was an Englishman and Audubon, foolish boy that he calls himself, because of his prejudice against any native of the "tight little isle," did not accept Mr. Blakewell's invitation until he was driven to do it. He called finally, and the first person to greet him was the despised Englishman's daughter, a beautiful young woman who later became Audubon's wife, a devoted, self-sacrificing wife. The naturalist speaks of her as he first saw her in one of his letters to his sons: "Oh! May God bless her! It was she, my dear sons, who afterward became my beloved wife and your mother."

After living for some time at Mill Grove, he returned to France, where he stayed for two years. One of his first duties there was to gain his father's consent to his marriage. During this time in France he says: "In the very lap of comfort, my time was happily spent. I went out shooting and hunting, drew every bird I procured, as well as many other objects of natural history and zoölogy."

Much may be passed. Audubon returned to America, and as a preliminary to marriage and acting under the advice of the father of his affianced, he tried to fit himself for a mercantile business, but it did not suit him. Birds, not business, were in his head. Before he had sailed for France he had begun a series of drawings of the birds of America and had begun a study of their habits. He was married in the year of 1808 in Philadelphia, and the next morning, with his bride, left for Louisville, Kentucky. He still intended to follow a business career, and with Ferdinand Rozier he opened a store in the Kentucky metropolis, which, as Audubon writes, "went on prosperously when I attended to it, but birds were birds then as now, and my thoughts were ever and anon turning towards them as objects of my greatest delight."

During the time that Audubon passed in Louisville he made constant excursions into the woods and fields. He was drawing birds and studying their habits in life constantly. His heart was with nature and the store was a burden. When he was forced to go to Philadelphia or New York to purchase goods he enjoyed the journeys only, as he confessed, as they afforded him the means "to study birds and their habits as I traveled through the beautiful, the darling forests of Ohio, Kentucky and Pennsylvania."

More than once Audubon allowed his pack horses, "laden with goods and dollars," to become lost to sight and in danger of being lost beyond recovery, while he stopped to watch the activities and to admire the colorings of some woodland warbler.

Pecuniary difficulties overtook the naturalist. He did not attempt, as a man of steadier business method might have attempted, to find a really serious means of recouping his losses. In a letter he says: "Your mother was well, both of you were lovely darlings of our hearts, and the effects of poverty troubled us not." The naturalist continued to make his pictures of birds and quadrupeds, and while his friends and relatives doubtless thought that his drawings and his forest excursions were a waste, possibly a willful waste, of time, they proved to be the basis of his future fame.

The Audubons went to Henderson, Kentucky, and then there was a new business venture, a steam mill, which he declares to his sons in a letter was "of all the follies of a man one of the greatest, and to your uncle and to me the worst of all our pecuniary misfortunes." Audubon worked hard at his mill, but he called it afterward the "bad establishment." He parted finally with every particle of property to his creditors, paying the last dollar that he owed and leaving Henderson with only his clothes and his original drawings. Of his wife, he says she felt the pangs "of our misfortune, but never for an hour lost her courage; her brave and cheerful spirit accepted all, and no reproaches from her beloved lips ever wounded my heart. With her was I not always rich?"

Audubon, as he expressed himself, was not inclined to foolish despair. He resorted to his talents, and for some time he drew portraits, managing thus to eke out a living, and still giving over as much time as he could to the drawing of

birds. He obtained a position in a Cincinnati museum, and he established a drawing school. The museum authorities promised to pay him well but did not keep their promise.

Finally the naturalist went to New Orleans. As Maria R. Audubon tells us, "he had now a great number of drawings, and the idea of publishing these had suggested itself to both him and his wife."

Audubon was separated from his family for nearly a year, being kept from sending for his wife and children because of the fear of yellow fever. He took a position as tutor in the family of Mrs. Chas. Percy of Bayou Sara. "Here the beloved Louisiana, whose praises he never wearied of singing, whose magnolia words were more to him than palaces, whose swamps were storehouses of treasure, he stayed till autumn, when, all fear of yellow fever being over, he sent for his wife and son."

Poverty was the part of the Audubons while in the far South, but the naturalist kept up his hope and his cheer. March, 1824, found Audubon in Philadelphia, where his drawings for the first time drew an attention which afterwards broadened and which finally led to the recognition which has lasted through the years. For a year he traveled through the woods and fields of New York and the country farther west about the Great Lakes. Thence again he went to New Orleans, intending from there to go to England. He had made in various ways, one of which was the teaching of dancing, about two thousand dollars, and with this and with some of the savings of his wife, money which she had put aside to forward the journey to England, from which much was expected, he started for the other side of the water.

It is impossible to give in detail the story of Audubon's visit to England. There he received encouragement for his work and recognition of his scientific researches. He went abroad again some time afterward and became associated with Mr. William MacGillivray, and the result was the "Ornithological Biography." Mrs. Audubon, who was with her husband, rewrote the entire manuscript that it might be sent to America.

In speaking of the association of Audubon with MacGillivray, Dr. Coues says: "The brilliant French-American naturalist was little of a 'scientist.' Of his work, the magical beauties of form and color and movement are all his; his page is redolent of nature's fragrance, but MacGillivray's are the bone and sinew, the hidden anatomical parts beneath the lovely face, the nomenclature, the classification—in a word the technicalities of the science."

Mr. and Mrs. Audubon spent some time in England and in Scotland, and later went to the Continent. The naturalist secured subscribers for his great work on the birds, and this to him was a breath of life, for it gave him the assurance of the means to continue in his chosen way.

There is a sharp realization on the part of the writer of this that in the briefness of the sketch nothing at all adequate can be given touching the experiences of Audubon at this time. He came back to America and went on with his work

He made journeys into all parts of the American wilderness, pursuing the work which he loved and which today the world loves him for. He explored Labrador and the prairies of the West. He knew the everglades of Florida and the forests of the North. The breath of the forests was his breath and the birds were his children.

John James Audubon was the greatest of our American ornithologists, for he was the one who gave inspiration to the study of the birds, and through all kinds of provocations and difficulties carried his study forward to success. "Just as sunset was flooding the pure, snowcovered landscape with golden light, at five o'clock on Monday, January 27, 1851, the 'godlike spirit, beautiful and swift, out-soared the shadow of our night.'"

The writings and drawings of John James Audubon are a fitting monument to his memory, but his noblest memorial is to be found in the work of the societies formed for the protection of the wild bird life and which bear his name.

The Great Gray Owl (*Scoliaptex nebulosa*)

By I. N. Mitchell

Length: 25 to 30 inches—the largest of all owls.

Range: Arctic America, straggling southward in winter to southern New England, New York, New Jersey, Ohio, Illinois, Idaho and northern Montana.

Owl, a family of birds of prey. The owl is known at once by its large feathery face and great wise eyes immersed in depressed circles of plumage. The owl is unable to roll its eyes or to look sidewise without throwing its head around. The bill is half hid in feathers. It is curved from the base like that of a hawk, and is well adapted to rend prey. The claws are sharp and curved for seizing, but are less powerful than those of a hawk. In order to surprise its prey, the flight of an owl is swift and noiseless. Most owls see better at dusk than in the daytime. For that reason they feed at night and seldom molest poultry, but live chiefly on rabbits, mice, insects, and other animals that move in the night time. A study of the stomachs of many hundred owls has demonstrated that, by the destruction of mice, they are to be regarded as more useful than otherwise. The owl eats its food, hair, feathers, and all. It is said that its health actually fails if fed on pure beefsteak. Hair, bones and feathers are formed into pellets and cast up through the mouth. A study of these pellets gives a clue to the diet of the owl. In the northern states owls nest in February. The eggs of an owl, usually two to four in number, are uniformly white and are almost hemispherical. In perching, the owl has the power to reflex the outer toe at will, thus grasping the perch with three toes forward and one backward, or two forward and two backward, thus giving it a firmer hold.

No ear-tufts; general plumage mottled, dusky, grayish-brown, and dull whit-



GREAT GRAY OWL.
(*Scotiaptex cinerea*).
 $\frac{1}{3}$ Life-size.

ish, darker above, lighter below, where the dusky markings are indistinctly longitudinal on breast and belly, and transverse on flanks, the whitish impure and with a fulvous element on the margin of the facial disk, hind neck, wings, tail, etc.; wing-quills and tail indistinctly barred; facial disk about six inches across, dusky gray, with numerous dusky lines imperfectly concentric about each eye; the edge of the disk dark brown and fulvous, and with more white below; the eyes bordered by black on the inner margin; iris yellow; bill pale yellow; feet and toes heavily feathered.

One autumn day some thirty years ago Charles Dury, of Cincinnati, was out quail hunting with some farmers' boys in Clark County, near South Charleston. While in pursuit of a scattered covey in a dense thicket, he came suddenly upon a monster owl, the like of which he had never seen alive. A quick shot fired full in the bird's face, blinded it, but did not inflict a mortal wound. Spreading its ample wings it fluttered away, regardless of a second shot fired after it, the gun being only a light muzzle loader charged with fine shot. Realizing that he had lost a prize, the young collector scoured the neighboring woods in search of it, but without avail.

This very rare northern visitor has not since been seen within the state, and it will hardly pass again the broadening belt of civilization which separates us from the Laurentian wilds, in which it makes its home. The bird is not really so large as it appears, but has long fluffy feathers within which the "meat" bird is almost lost. Its eggs are not larger than some laid by the barred owl.

Birds and Seasons in My Garden

I. February and March

By Mabel Osgood Wright

In the dark silence of her chambers low,
March works out sweeter things than mortals know.

For all the sweet beginnings of the spring.
Beneath her cold brown breast lies fluttering.

—MAY RILEY SMITH.

There is nothing more interesting, and I may even say curious, than, when looking back over a period of thirty years spent more or less under out-of-door influences, to realize the very different emotions called forth by the same happenings in very much the same surroundings.

In my garden plot covering, in cultivated, open field and wild, not quite ten acres, it would seem that the coming and going of the seasons in flower and bird-life would bear a certain defined stamp not untinged by monotony, yet it is

quite otherwise. In New England at least, there always chances the element of tantalizing uncertainty that is the salt and spice of pursuit.

Then, too, there are added the different phases born of the seven ages of man, and the seventy times seven changes of mood and temperament. At first, birds were simply two-legged, feathered things, that sang more or less well, and would usually discover the ripe side of every strawberry and cherry at least half an hour before the human picker appeared on the scene. Spring and summer brought birds, how they lived in the absent interval one didn't know, and any sort of systematic aid in solving the feeding problem, other than shaking the table-cloth out of the window, did not trouble one. Neither did the matter of housing, to any practical extent. Bird houses were mostly impossible vaudeville constructions, with many doors and little privacy within, and certain to be draughty.

Then came the "want to know period," when birds were things to be listed, identified with deadly certainty upon insufficient evidence, and treated in the precise manner of the multiplication table. These were days of wonderful discoveries. When the Chat seen at a new angle was recorded as a Prothonotary Warbler, causing one's really scientific friend to smile indulgently and yawn, but quite politely, behind his hand.

Then a reasonable familiarity with the common birds settled over me, and their personalities became the prime factor. (Not but what I shall always be hazy about certain sparrows and fall-coated warblers when seen in the bush.)

I no longer strove frantically to count every robin in a flock, or filled pages in my note-book to prove that a flock of bluebirds seen on a certain February 11, at 10 a. m., was not the same as a flock of the identical birds seen the same afternoon just before sunset. There is always a time when most students waste much vital force in trying to prove the unprovable and absolutely unimportant.

In fact, it is not until the days of the spirit and ethical enjoyment supplement the dusty days of dry-as-dust note-book record that the real meaning of the birds, the birds about home, the birds of the garden, and above all, the birds of one's *own* garden, are revealed. When this once happens, the full chord is struck, combined not only of their meaning to us, but also to the new relation in which we stand to them. In this relationship lies the full reward that comes to those of middle years to whom the bird has ceased to be a bit of anatomy, a step in the ascending creative ladder, but is a personality, a voice that joins past to present so imperceptibly that the transition to the future is an assured finality.

Enough! So comes February again, the discouraged and discouraging long-short month of the year, and yet no two Februarys are precisely alike. Twelve only of these months of which I have record have been absolutely snow- and ice-bound, while all the others have varied from *largo* to *capriccioso* and *allegro con fuoco* in their movements. But, there is mostly a *but* to times of trial. If the birds are fewer than in December and January—which is the high tide of resident, transient and wind-blown visiting bird-life—we have more than an hour

longer at night and, before the month ends, an hour in the morning, in which to see those birds we have, and, a significant fact, the sun rises full upon the old apple-tree feeding-place, that has lain under the black shadow of the house-cover these two months gone. This may seem a very slight happening, but it makes an earlier call to breakfast; for, even if suet be still as solid as low temperature can make it, it is certainly more palatable if the Downy, Chickadee or Nuthatch that visits it has the sun on his back. In this lies a hint to the placers and maintainers of either bird-houses, winter-shelters or feeding-stations; location has more to do with success than is usually supposed. For feeding-stations, a top-shelter from snow and rain, with side wings or some other sort of wind-break, is absolutely necessary, together with the selection of a spot that lies in the sun all of the brief winter days.

Nesting-houses should have a reasonable degree of protection from the sun and, especially should the doors be protected from the noon and afternoon rays; but, on the other hand, houses for winter shelter should also be sun-baths.

Of the forty species of birds that I once recorded as having nested in the home garden some fifteen years ago, a number have dropped away for lack of suitable nesting-sites; though, on the other hand, some eight or ten have added themselves to the original list, bringing it up to fifty.

I am now trying, by supplying certain of the deficiencies, to make it possible for these to return; and, in one instance, the success was positively startling.

For many years we had a Screech Owl brood as a matter of certainty; then certain old trees and nooky out-buildings disappeared, and with them the Owls. This autumn in making some Bluebird boxes of old shingles, with top and bottom of strong new wood, I had a length of pine plank an inch and a half thick to spare. This was roughly fashioned into a couple of boxes one foot square with a hole three and a half inches in diameter rather nearer the top than the bottom. A single shingle fastened on the roof was so angled as to keep rain or snow from the opening. In looking for a suitable spot for the houses, two Norway pines seemed promising. Each had lost twenty feet of the top by wind and lightning, and the branches, in one instance, had stretched up as if to hide the scar. The boxes were placed on the tree-tops, the twelfth of December, to the tune of very skeptical remarks by the man who did the climbing, to the effect that I might get a gray squirrel to look at the box, but, as for anything as leery as an Owl, it would look like a trap—new wood, too. Here a sniff came in for punctuation. But then, the box was of an awkward shape to get between the thick branches, and it was a sticky rough bit of climbing which may be considered as tinging his opinion.

Box No. 2, on the taller tree, stood out well from the branches and caught every possible ray of sunlight, while the other was in a thickly wooded place shadow, except for a short time in the afternoon.

Three days later, the doubting Thomas called me. He was chopping wood under box No. 1, to which he called my attention by an upward jerk of his thumb. There, completely filling the doorway, was the head of a rust-red Screech Owl,

eyes apparently closed, yet evidently sufficiently awake to enjoy his sun-bath to the full. Every bright day until the present found him at his post, but on cloudy days he was absent, and also toward dusk, but if he was inside the box or in more secluded quarters I do not know.

Perhaps he goes to tell the news to a mate in other woods. If so, when they set up housekeeping in which box will it be? In sun or shade? The winter hollow will be a bake-house before the owlets, who take plenty of time to grow, leave the nest. On the other hand, the box in the grove will be chilly in early April. The matter is quite a pretty problem, well worth watching, and brings one to thoughts of the nesting season even before there is a single wing-flutter of the spring migration.

"Spring migration," you echo in amazement, "with a fresh fall of snow last night, Redpolls at the feeding place this morning, and the ranks of winter residents and visitors still unbroken?"

Yes, in spite of many signs, and the fact that even in southern New England February and March are often the most rigorous of winter months, a sunny February day holds up the promise of spring, at least to the mental vision, as clear as if reflected by a Claude mirror.

The thaw of last week freed the pool of ice, and, where the light snow that fell for an hour last night edges the water, there is a greenish tinge to the overhanging grass. Yes, and the ripple on the water is made by a Song Sparrow drinking. True, he may be a winter bird, but then again he may be a pioneer of the first upward flight. I have seen Red-wings, Robins and Bluebirds that I knew to be migrants all drinking in this pool, which is a natural spring the last week in February. And what a bird-lure is this pool in and out of season! For, when an August drought dries many a merry stream, there is always water here; and, even when ice freezes to an inch-depth every night, this little spring held, as it seems to be, in the warm palm of a particular bit of Mother Earth, feels her warm heartbeats and offers, by a sort of magic, the first refreshment and spring cheer to the winged wanderers.

It is here, in spite of its proximity to the house, that I am sure to see the first and last of the Green Herons and Black-crowned Night-Herons; though of the latter there is no "last," as usually we have a pair or two with us all winter, going by day to feed in the tide pool of the salt marshes, and returning by night to the thick shelter of the spruces, where they will have a nest or two later on.

In the bit of meadow beyond the spring, any time from middle February to middle March, I shall see the first glistening flock of Purple Grackles, working industriously among the grass roots, drinking, perhaps, if the day is mild and windless, taking a fluttering, hasty bath and then mantling the big red oak in iridescent hues, akin to the reflections in deep black water, while they preen and call to one another, "Here we are at last, and, thank our lucky stars, these house people *haven't* drained our pond or cut down our club-tree since we left, and they *have* thoughtfully plowed up an old bit of meadow below in the Bluebirds Apple-



AMERICAN AVOCET.
 $\frac{1}{2}$ Life-size.

tree Land, from which we will pick all the big bugs and slugs and things as soon as we are a bit rested."

February was a week old when I looked out, a little after sunrise, at the apple-tree feeding-place below my bedroom window. I rubbed my eyes the more clearly to see what was at first a confused mass of deep red and bright blue.

The red proved to be a handful of waste cranberries, put out upon the principle of giving all the variety possible, or the chance attraction of novelty. The blue was not of the Jays that, as usual, were conspicuous winter residents, though several of these boisterous, beautiful cowards were lurking nearby, and making disagreeable remarks, in which the presence of the little Owl in the box had its place.

No, the blue was soft, rich, and unmistakably the color worn only by Bluebirds in at least "near-spring." Three of them were there attacking the tart fruit with all the vigor of Catbids at the beginning of the berry season. I could not prove it by any scientific axiom, and yet I know that those birds had come in the night, how far one may not guess; for, in spite of their joy in the succulent food, there was a sort of lassitude about their general actions that did not belong to the roving flock of a dozen that had turned up at intervals all winter.

With bills dyed red, they presently paused, cleaned the juice off by polishing on the wooden shelf with a deft sidewise motion, and then they attacked the suet with as much relish as the Chickadees.

"Go down to the farm and see the new boxes I've put up for you," I said, opening the window, and quite forgetting our different methods of speech: "They may not be so pleasant as the holes in the apple-trees, but they have mostly toppled over since you left in the fall, and my shingle houses are quite as good as the fence-post and telegraph-pole lodgings of which you are so fond."

The Bluebirds fluttered over to a lilac bush and, with backs toward the sky and breast to earth, instantly merged in their surroundings, and became practically invisible as they settled for a rest. Then, as I looked and listened, a Song Sparrow piped up down by the spring and the clear call "Spring o' the Year" came up from the Grackle-plowed meadow, where some old stalks of buckwheat still dangled seeds about the edges.

"Mother Earth is surely turning over in bed," I said, "even though she is not quite ready to throw off her covers and awake." The Bluebirds have come to us, and tomorrow, perhaps, the Brown Creepers, Tree Sparrows and White-throats, that have been with us since December, will move on, and some one to the northward will look out of the window, and, taking heart even as I did, say, "See, the spring migration has begun!"

Yet; without the birds, February would be only the disagreeable long-short month of broken promises. Surely, at this time of year in my garden, the birds make the season worth the living.

—Bird Lore.

The Avocet (*Recurvirostra americana*)

By Henry W. Henshaw

Length. $16\frac{1}{2}$ inches.

Range: Breeds from eastern Oregon, central Alberta, and southern Manitoba south to southern California, southern New Mexico, northwestern Texas, northern Iowa, and central Wisconsin; winters from southern California and southern Texas to southern Guatemala.

Though not a game bird in any proper sense, the avocet finds mention here because it furnishes a shining mark for the gunner, and in consequence has practically disappeared from the Atlantic coast. Numbers of avocets are still to be seen along the borders of sloughs and ponds in the far West, though even there the bird by no means enjoys the immunity from persecution it deserves. Its striking colors, its vociferous voice, long neck and bill, and its longer legs, combine to render the avocet so conspicuous that its only chance for safety rests in seeing its enemies before it is seen by them. Its long legs have another function as they enable the bird to wade in the shallows, where its food is chiefly obtained, while its webbed toes enable it to swim easily when need arises. Its slender, upward-curved bill may well excite wonder, but Nature knew what she was about in designing it, for its form admirably adapts it for finding and seizing any prey that may rest on the surface of the muddy ooze, or for probing for various larval forms common in fresh water. It nests on the margins of the ponds which it frequents, and no sooner does an intruder appear than it flies to meet him with loud outcries that unmistakably betray the secret it is so anxious to conceal. The avocet, so innocent and beautiful, is now protected by the Federal law and, as its flesh is worthless, neither sportsmen nor gunners have any excuse for slaughtering it.

To a novice the compound curve of a scythe handle might seem an awkward thing, but a little practice upon stubborn grass will justify its precise lines of beauty. Similarly, the long upturned beak of the avocet appears quite outlandish until one learns how perfectly it is adapted to its peculiar task. Since the bird frequents brackish and muddy pools, as well as the margins of streams, it does not depend largely upon eyesight in securing its prey, but thrusts its bill under water until its convexity strikes the bottom. Then, guided by this "heel," the bill is swayed rapidly from side to side with a scythe-like motion, and the bird keeps up a sort of dabbling, as it tests the various objects of food encountered.

The avocet is a bold wader, pushing out into the pond breast deep. If it gets beyond its depth it is nowise concerned, for it swims readily, and can dive also, if necessary. Long bill, long neck, long legs, web feet—a curious bird.

Getting Ready to Welcome the Birds

By Henry Turner Bailey

"I do not wish to think of living where birds cannot live with me. I never have lived in such a place, not even when I roosted on Beacon Hill in the upper story of the great city of Boston."—*Dallas Lore Sharp*.

Where do they come from? The usual answer is, "From the South." Until recently that vague answer represented about all we were sure of. From how far south? From what regions of the South? By what routes do they come? How long does the journey require? These and many other questions cannot yet be answered with certainty for all kinds of birds. The new trick, the numbering of birds by means of a metal tag attached to the leg, is helping bird lovers to answer them and to ask others!

We know that a few kinds of birds, the owls, downy woodpeckers, English sparrows, and crows, haunt the same locality the year round. A few others, like the chickadee and the robin, seem to stay with us; but it may be that the Canadian birds winter in the northern states while our own birds are enjoying themselves further south.

Most of our birds, however, leave us in the fall and return in the spring. Some, like the bluebirds and blackbirds, go only as far as our southern states. The swallows and the swifts go to Mexico and Yucatan. The orioles, the bobolinks, and the redstarts go to Venezuela and Guiana. Some of the warblers who summer in Alaska winter in Brazil. The golden plovers fly from the St. Lawrence, 8,000 miles over-sea to the La Plata! They all have to go for food, the naturalists say. But why should they return? Do they exhaust the food supply in the south?

Whatever the reason, back they come, and the whole northern world gives them welcome. Nobody knew how they traveled until an astronomer looking through his telescope at the moon, one night, a few years ago, happened to see the birds crowding one of the great highways of the air. The birds fly mostly in the night, often high up, out of sight. They seem to be guided chiefly by coast lines, and rivers, and mountain chains.

The New England birds come up the coast to New York and follow the Sound eastward. The Connecticut Valley birds turn northward at Saybrook; the rest at Narragansett or Buzzards Bay. Some of these follow the Merrimac Valley to the White Mountains, others go on to Maine, and steer inland by means of the Kennebunk and the Penobscot. At last, somehow, they all get back to the places where they were born, so we are told, and since the tagging began, we are quite sure they do, in some cases, at least.

You have often seen the swallows gathering in late summer, to make the southward journey together. Did you ever see such flocks returning? I was at Katahdin Iron Works, Maine, one spring when the chimney swifts arrived

in a body. There must have been a hundred thousand of them. An old resident there said they come every spring to the great chimney of the ruined furnaces, hold high carnival for a week or so, and then separate for the summer.

Sometimes when the weather is bad the migrating flocks fly low, and in foggy weather are often attracted by the shore lights. "The Bartholdi Statue at the mouth of the Hudson River, is directly in the path of the great streams of migrants," writes Frank M. Chapman. "On one occasion after a storm no less than 1,400 birds were picked up at its base, having been killed by striking the statue or the pedestal upon which it rests."

"The first arrivals from the South," says Ralph Hoffmann, "the crow black-birds, bluebirds, etc., reach the lower Hudson Valley by the end of February, and the latitude of Boston early in March. These are birds that have wintered within fairly easy reach, in the Carolinas, perhaps, or in Virginia. Stormy weather delays them; a warm spell with southwest winds brings them early. All through March and early April other birds which have wintered in the Southern States arrive. In the meantime, birds that have wintered in the tropics have been pushing into the Gulf States or into Florida, and at each warm wave they advance, till in May they flood New York and New England in a great wave. The first warm, fair night following a hot day, or, better still, two successive hot days, between the third and tenth of May, will generally bring the first orioles; the next such spell of heat will bring all the northern warblers and thrushes. If early May is cool and clear for days, the birds do not arrive in a great body, but slip through in little flocks, almost unnoticed. A cold northeast storm following suddenly on a hot wave makes the best conditions for observing migrants; they are held back in great numbers, and as they feed low in the bushes in such weather, they can be easily studied. About the city of New York, migration is practically over by Decoration Day."

The migrating birds have many secrets. Why do solitary birds arrive sometimes several days in advance of the host? Why do the male redwings arrive several weeks before the females? Why do the rusty blackbirds come straggling along for two months? Why are the winter wrens, so abundant farther north, so rarely seen *en route*? Why are some birds prominent in the fall migration who are seldom seen in spring? The answer is they fly southward by one route and northward by another. But why? Oh, the birds are fascinating friends!

My own special "crush" is the ruby-crowned kinglet, one of the smallest of birds, with one of the sweetest of songs. He is one of the most inconspicuously dressed notwithstanding his flaming crown. Though I have never seen him fly more than a few feet at a time, this atom of a bird winters around the Gulf of Mexico and nests somewhere in Labrador. By the records penciled in the margin of my bird book I find that he condescends to greet me from the big cedar at the back door of my studio, not earlier than the 25th of April and not later than the 27th, year after year. Is it the same bird? How does he manage to hold so closely to his time schedule? He never seems to be in a hurry, although

he seldom stays long in any one place. How much time does he spend on his three thousand mile trip twice a year?

Some of the migrating birds are said to fly more than a mile a minute. Do you realize what that means? A bird could leave Havana, Cuba, at seven p. m., take breakfast at Charleston, South Carolina, sup in Boston at seven that evening, if he wished, and greet the next sunrise in Newfoundland!

Study the routes of migration, especially the one followed by the birds in your locality. Make a map. Study pictures of the birds you are likely to see. Read about them in some good bird book. Become familiar with the time schedules of the birds; then you will know which ones to expect in March, in April, and in May. Go to bed early that you may be up with the sun from March 20th to May 20th, at least. The most favorable time for seeing birds is before seven in the morning. Get some friend interested in birds to go with you. Wear old brown and gray clothing. Dress warmly. Protect your feet. Learn to walk quietly. Keep your mouth shut and your eyes and ears open. Take an opera glass, if you have one, and a note book. Compare what you find with a good bird book.

As a beginner I found Ralph Hoffmann's book most helpful. His keys for identifying birds classify by color and size.

(1) When you see a new bird look first for his colors. What are they and where are they? The diagram, Plate II, showing the principal parts of a bird, will help you to locate the colors, and to understand the descriptions in the bird book. The most prominent identifying colors are usually about the head and breast, and the wings, especially the upper portions of the wing, which frequently display well defined markings of color called wingbars.

(2) Think next of the bird's size. Is he larger or smaller than an English sparrow? Is he as large as a robin? How does he compare with a crow? These three perfectly familiar birds serve as standards for comparison.

(3) Now notice where the bird is and what he is doing.

(4) Try now to think about the shape of the bird. That shape is conveniently thought of as being made up of two pointed ovals, with three additions—neck, tail, leg. Think of the *shape* of the ovals, of their *relative size*, and of their *relative position*.

"If I could put my woods in song, and tell what's there enjoyed
All men would to my garden throng and leave the cities void."

—Emerson.

The Prothonotary Warbler (*Protonotaria citrea*)

By W. Leon Dawson

Length: 5½ inches.

Range: Eastern United States, west of Nebraska and Kansas, north to Virginia, Michigan and Iowa, casually to New England.

Colors: Head, neck and breast, bright orange-yellow; blue-gray wings, rump and tail; bill, black; tail with white spots near the tip.

Pre-eminent in a galaxy of beauties is this truly "golden" warbler of the swamps. He does not come over hill and dale with a rush and flutter of wings and a nervous anxiety to get on, such as characterizes most of the northern migrants, but proceeds rather in leisurely fashion along the valleys of the larger streams. Sedate in movement and fearless, but not bold, in bearing, this rare bird appears to bring with him something of the languorous air of the Southland from which he hails. His chosen haunts, too, flooded lowland woods, are even more strongly suggestive of those watery fastnesses of the south, where the species is found in greatest abundance.

The Prothonotary Warbler is, so far as known, the only one of the family to build regularly in holes in trees. We infer that it has drifted into this custom within zoologically recent years, since its eggs are unusually dark colored, while those of all strictly hole-nesting birds are pure white. The eggs of this warbler exhibit two types of coloration, with, of course, every variety of intermediate form. Those of the first type are heavily and rather evenly spotted and dotted with dull brown, and show pale lavender shell-marks. The other sort are boldly blotched with reddish brown so heavily at times that the ground color is nearly obscured.

According to Professor Butler, the females construct the nests and perform all the duties of incubation. A few days are allowed to elapse after the completion of the nest before laying begins. An egg is laid each day until the set is complete, and two broods are often reared each season, especially southerly.

During the mating season the males are exceedingly irascible. One hapless wight I saw, who, choosing the wrong platform for his song, was set upon vigorously by a jealous rival. At the first onslaught the pair fell fighting to the ground. They picked themselves up hastily, and one, probably the original assailant, chased the other about for as much as three minutes. In and out they wound, now coming straight toward one like golden bullets, now threading the mazes of a tree-top like flashes of fire. But the fugitive was plucky, too, for a fashion, and although he thought of nothing but flight, it was always within the bounds of the disputed territory. Finally the chase languished somewhat, and I left the contestants, faint yet pursuing.



PROTHONOTARY WARBLER.
(*Protonotaria citrea*).
About Life-size.

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The Gnat-catchers

By Millie Noel Long

I was spending the summer at a country place in southern Ohio. My study was a large, breezy attic shaded by tall trees. Just outside my west window were the slender branches of a young poplar tree, and one May morning I discovered that the tree contained a nest. For years I had been an observer of birds, but had never discovered so queer a nest as this one. The outside was many-colored, and, in spots, shone with a silky lustre. With the aid of my glass I soon obtained a correct idea of the materials. The silky spots were composed of the strong, glossy fibres of plants. The bright-colored patches were petals of flowers which had been woven into the structure. The nest was small and cup-shaped, and suspended from one of the most slender twigs. The next morning, at early dawn, I heard a soft little warble, and creeping noiselessly to the window, saw both the male and female birds, the former sitting above the nest, singing his little song—the latter greatly agitated as she balanced herself on the edge of the nest. After studying the outlines and coloring of the tiny couple, I decided that they were Blue-gray Gnat-Catchers. The female continued her anxious flutterings, and at intervals, poked and thrust at something in the depths of the nest. Finally, the male bird ceased singing and descended to help her. Together they worked and pushed, and managed to roll over the edge an egg, which seemed enormous compared with that tiny nest.

As fast as possible I descended to the spot where the egg had fallen, a distance of thirty feet, and although it was badly crushed, I could identify it as the egg of the cow troupial, that well-known tramp among birds. It was of a dull white, inclined to buff, and marked with irregular spots of brown. Afterward I frequently heard the soft little warble of the male bird from my window, but the song could not be heard from the ground because of its small volume. At times, when the birds were very busy, I could hear a soft "tsee, tsee, tsee," no louder than the squeak of a mouse.

The resemblance between this pair was stronger than is usual among birds. Both were bluish-gray on the upper part of the body, and bluish white beneath. The female appeared a shade lighter than her mate, and the black line over the eye in the male was absent in the female.

Including the long slender tail, the birds did not exceed five inches in length. They continued their house-keeping, but the nest was too deep to afford me a glimpse of the eggs or of the young birds when they appeared.

Just at the most interesting time, when the young birds were at the right age to begin to fly, I was called away for a period of several weeks, and on my return all the birds had disappeared, leaving the faded, dingy, empty nest still firmly clinging to the bough.

The Louisiana Water-Thrush (*Sciurus noveboracensis notabilis*)

By Lynds Jones

Length: 6 $\frac{1}{4}$ inches.

Colors: Above, dark olive brown; whiter below than the water thrush

Range: Eastern United States north to southern New England and southern Michigan, casually north to Lake George, northeastern New York, west to the plains. In winter, West Indies, southern Mexico, and Central America to Panama.

Amidst our more modest surroundings the Louisiana water thrush occupies much the same position relatively that the water ouzel does in the mountainous regions of the West. Both birds possess themselves of the wildest in nature which is to be had, and both are the animating spirits of their chosen haunts. Although no one suspects any structural affinity between the two, a half dozen other close points of resemblance might be noted, not least among which would be poetic temperament and the talent in song.

Only the most picturesque and unfrequented glens are tenanted by this poet-bird from the South. Where cool waters trickle down from mossy ledges and pause in shallow pools to mirror the foliage of many trees, here, and here alone, you will find the water thrush at home. The bird will discover himself to you by an imperious *chink* of question and alarm, after which he will pause at the water's edge impatiently, as though awaiting your withdrawal. The bird stands with the body horizontal or with the hinder parts elevated, jetting the tail vertically from time to time without moving the head, or else bowing with profound but unconvincing gravity. If you are discreet enough to withdraw, or to pretend to, the bird will proceed with the business of getting breakfast, either by wading about in the shallow water, or by searching noisily among the dead leaves hard by. Nor does he forget to give vent to unallayed suspicions by an energetic *chink*. Or by and by *he* tries hiding, and disappears mysteriously behind a bunch of ferns. One minute, two, three, are allowed to elapse. "Ah, that means a nest," says the shrewd observer; and he moves forward with becoming caution. But the bird is up and off in a trice, and flies down the glen without an apparent pang. A search is made, half-heartedly, with the old result—"nothing but leaves."

Wherever the nest is to be found (there be those who claim to know, but the author is not one of them), one thing is sure, the bird regards himself as trustee of the whole glen, and his watchful fidelity is impartially bestowed upon all parts of it. If you become especially interested in any one spot,—for reasons best known to yourself—why of course he and his wife can go elsewhere; and they move off, sniffing loftily. Every half hour or so the male bird ranges the length of the glen. Now he dashes like a swallow across some open glade. Now he pauses on a log or stone; alternately moving and inspecting until his voice is

LOUISIANA WATER-THRUSH.

(Seiurus motacilla).

Life-size.



lost in the distance. You may be near his nest, but he does not deign to notice you, further than to give vent to a disdainful "*humph*" in passing.

The song of the resident water thrush is one of our choice things. The bird has found the Pierian spring, tucked away somewhere among our hills—in Morgan County, I think—and has tasted to good advantage. Its notes are wild and ringing clear, but sweet also as honey which the wild bees have made. There is a tumultuous passage in it too, which may occupy only the middle portion or may engulf the whole. At times the singer's main force seems to be expended in the opening peals, so that it almost instantly falls back into a milder cadence or bubbling twitter, in which its warbler affinities are quickly recognized.

As to its platform the musician is not so particular. Usually a free branch from ten to twenty feet high is selected, but I have seen the bird sing his best song while standing knee deep in water. There is said to be also an ecstasy song which lifts the bird quite clear of earth. Audubon declared the water thrush's song equal to that of the English nightingale, but a somewhat less extravagant claim will leave us with a keener appreciation of the bird's real merit.

Prairie Chicken (*Tuympanuchus americanus*)

Range: Southeastern Saskatchewan and southern Manitoba to eastern Colorado, northeastern Texas, Arkansas, western Kentucky, and Indiana.

"The chicken" is a lover of the open prairie and as a substitute readily accepted the wheat and cornfields of the early settlers, in which it was, and still is, a valuable ally of agriculture. However great its value to the farmer, if we are to judge from present appearances, this fine prairie grouse must soon be written of in the past tense. Formerly abundant all over the Mississippi region from Manitoba south to Louisiana and Texas, and extending as far west as Colorado, today only a scant remnant of its former numbers is left, and this remnant is fast dwindling under the combined attacks of sportsmen who should know better, and of gunners who neither know nor care for consequences. Ranging only a short distance north of our boundaries, the prairie chicken is in the strict sense of the word an American game bird, and one must go far to find a finer. Being non-migratory, it is State property, and its fate rests solely with the individual States within which it resides. Considering its past abundance, the fine sport its pursuit affords to the legitimate sportsman, its delicacy for the table, and the valuable service it renders the farmer in destroying his insect enemies, the record of its treatment is a shameful one. In many States no protection whatever was given the bird till its extinction was practically assured, while in the States in which adequate legislation has been enacted, open seasons, too large bag limits, and inadequate enforcement of the laws have produced their inevitable effect. Nothing short of a closed season for a term of years will turn the tide and save this noble bird from extinction.

Glow Worm and Mockingbird

By E. P. Powell

As we went down our garden walk the other evening we saw a glow worm resting on the edge of a mockingbird's bungalow. Just why he did not put out his lantern as we came along we do not know, but keeping it lit, he showed us the little fellows inside the nest. Our Southern glow worms, you must remember, are not the little sparks of your Northern garden, but are real torches—streamers sometimes two or three feet in length, and lasting for two or three minutes at a time. It was well worth the while! A country house built by a bird and the whole family enjoying the moonlight evening!

The cardinal birds had been visiting us, and had taken baths in a concrete basin behind the power house; but we had had no indication of an adoption, nor of a thank you. Occasionally a brilliant fellow had dropped down with his wife into the chicken yard, to dine with the Rhode Island Reds. One day last week we found a couple evidently intending to home it with us, and not long after we found the home in a kumquat tree. It had been built and furnished cheaply but handsomely, and snugly in the trundle bed lay three young birds. Already these chaps, fed from our chicken cribs, have fledged and flown. Instead of having food carried to them they come now with their parents and have learned how to liberally help themselves.

Every morning we are waked up just before daybreak with a call from the mulberry tree, with "wake up, wake up"; but sometimes it is "get out, get out." Not much trouble is taken to infuse music into the order, and yet we do not take it amiss. It is a broad hint not to lose the glory of the morning, and we are quite willing to take it. Really it seems to be meant for laggard folk, to get out of bed with the dawn; and why not? Daybreak is the best of the day, and the birds have found it out.

We are watching now to see what will be done with the empty nest. Will another litter of eggs be laid, to add to our tenants? Really a home is not a home until the birds have found you out. If you are planting and living as you should, with plenty of shade, plenty of water and plenty of food, the birds will soon discover it, and those that feel safe with you will bide with you. It was a long while before we could get the wood thrushes to put their nests near our house, and the orioles stole our cherries several years before they swung their nests in our orchard, but they came nearer, and at last homed in our orchard.

We love all birds, that is, nearly all, excepting English sparrows, bluejays and that sort of oriole that sticks his bill into forty cherries, spoiling what he cannot eat. We have no sympathy for hawks, not if the government does send out bulletins every month in their apology. But what would life be without plenty of catbirds, with robins, and grosbeaks, goldfinches in the North; with nut-hatches and chickadees for winter? And down here it does not become tolerable until the mockingbirds and cardinal birds bid us good morning and good night.

There is a funny fellow that chips in just after sunset, with "Will's Widow! Will's Widow!" and keeps it up until midnight. We have never found his nest, nor have we any idea whether he considers his ejaculations to be musical or prosaic. But he punctuates the hours until "Bob White," just at daybreak, crowds him out with his hearty calls under our window.

"Bob" is so wonderfully like our Rhode Island Reds that we are always glad to have him invade the yard, and if he brings a family of sixteen to twenty to breakfast, all the better. He is an inquisitive fellow and very soon finds out where he is welcome. Everybody likes him, but most people prefer him on the platter. No man shall glorify his sportsmanship by shooting "Bob" when he comes to us for protection. He has already found that out right well.

We are not quite sure that birds do not study us quite as much as we study them. There are kodaks pointed at us out of the bushes, and memoranda made that do not always go into print. It reads possibly like this: "A sober old couple lives in the cottage by Lake Lucy." "The people on Sconondo Knolls don't mind it if we help ourselves to cherries when hungry." "We know where an old lady lives that hangs out bones of cold mornings for birds to pick." This is not written out on foolscap, with Dixon's pencils, but a bird memory will serve as well as a school boy's slate.

Sure enough! We looked into the kumquat this morning, and there were three more mouths wide open and three pairs of eyes studying us potentially. Observation on both sides, and the birds were calling on an old inheritance for an explanation of our sort of folk. Some ancestor had laid up in their brains a bad record of human folk in general; "stupid," "selfish," "arrogant." We will try to correct the record and shall be on our best behavior while these fellows are watching us. Short on English, they gave us a bit of bird talk and we answered in the same pidgin English. We chipped a bit, and tried to get acquainted. In this way if we meet the valuable birds half way they will soon come the rest of the way, and home will be vastly more homeful.

We are ambitious to have a bird house at every turn in our garden walks. We have seven in the grape vines around our Northern home, mostly robins' nests. These fellows know that they are natural human companions. The indigo bird and the catbird are not far away, but they are well hid. In the fall one likes to run across a goldfinch nest in a currant bush, and all summer a right sort of man steps carefully in his clover field, and works in his raspberry lot with caution lest he disturb a sparrow's home. It is curious what a company of co-workers we can become if we will. Only never lose yourself in the forest of supposing these song-full companions are not also thoughtful and friendly. God made this world in such a way that we need co-operation with all sorts of creatures to make our homes complete.

Down here in Florida we have not found a single bird's nest that shows architectural skill. The birds all seem to be so wrapped up in the simplicities of everyday life that they dispensed with art. The mockingbird is even more care-

less than a catbird, carrying a double handful of handy sticks into an orange tree, where he does little more than pile them together, without even lining them for his eggs. The cardinal bird also likes to have his house well ventilated, but there is a pretense of lining, made mostly out of pine needles. These, if woven together, do not make so bad a hammock. I do not think any of these birds could use the same nest two years in succession, although very likely they might use it twice in a season. But, then, just think of it! What fun it is to find such a nest of birdlets in January—any day, all winter; not to mention the roses on your Marechal Neil, and calls to wake you up in the morning, as likely in midwinter as midsummer. *The Independent*.

The Mexican Mot Mot (*Momotus momota*)

By Gerard Alan Abbott

Length: 12 inches.

Range: From Mexico to Brazil.

Food: Insects, reptiles and fruit.

Any one of several species of long-tailed, posserine birds of the genus *momotus*, having a strong serrated beak and is sometimes called *motmot*.

In most of the species the two long middle tail feathers are racket-shaped at the tip, when mature.

These interesting birds are natives of southern Mexico, Central America and northern South America. Building no nest they deposit the eggs in depressions of sand, generally on the side of a hill. The interesting feature about these birds is that they trim their own tail feathers. The long feathers are naturally barbed to the point, but the middle portion of the barbs is sheared off by the beak, it is said in order to preserve the balance of the birds in flight. This shy bird lives in dense forests. The note is a peculiar call, "Houton, houton," from which call is derived one of the names.

White-Fronted Goose (*Anser albifrons gambeli*).

Range: Breeds on and near the Arctic coast from northeastern Siberia east to northeastern Mackenzie and south to lower Yukon Valley; winters from southern British Columbia to southern Lower California and Jalisco.

Though occasionally met with on the Atlantic coast and not uncommon in the Mississippi Valley, the white-fronted goose is essentially a bird of the far West, and is particularly abundant in the Pacific Coast States. This is one of the geese which used to visit the wheat fields of California in such numbers as to threaten the crop, and which men were hired to kill and frighten away. The hordes of former days are now represented by comparatively small numbers, and as the flesh is toothsome the problem of the near future is not how to



MEXICAN MOT MOT.
(*Momotus swainsoni*).
 $\frac{2}{3}$ Life-size.

destroy the birds most cheaply but what methods to employ to preserve them. White-fronted geese were found by Nelson breeding abundantly in the Yukon delta from the last of May till well into June. Their nests are placed on the grassy borders of lakelets, whence the young can be quickly led into the protecting water. In far-off Alaska this and the numerous other species of waterfowl that summer there in multitudes not only find comparatively safe solitudes in which to nest but, what is equally or more important, abundant food for themselves and their young. When they arrive in Alaska, late in April or early in May, according to the season, they find the previous year's crop of heath berries awaiting them in cold storage. Again in August and September the new crop of berries is ripe, and upon this the geese fatten and prepare themselves for the trip southward. Thus Alaska, the acquisition of which from Russia has more than fulfilled our expectations in many ways, proves to be the mecca of our waterfowl which, resorting there in spring by thousands, return in fall in fourfold numbers.

Cedar Waxwing (*Bombycilla cedrorum*)

Length, about $7\frac{1}{4}$ inches. Known from every other American bird, except its larger cousin, the Bohemian waxwing, by its crest, grayish brown upper parts, yellow tail band and sealing wax-like tips to secondaries and, sometimes, to tail feathers.

Range: Breeds from central British Columbia, Alberta, southern Keewatin, northern Ontario and northwestern Quebec south to southern Oregon, northern New Mexico, Kansas, northern Arkansas, and North Carolina; winters over most of United States and southward to Mexico and Panama.

In clothing the cedar bird, Mother Nature essayed her very best and reached the limit of quiet elegance. As if aware of the distinction conferred by its smooth delicately tinted plumage, the waxwing has the air of a well-bred aristocrat, and comports itself with a dignity that is very impressive. Why this beautiful creature should be denied a voice is a mystery but, with the exception of the faintest kind of a whistle and a few low notes, seldom heard, the bird is silent. But its beauty and the good it does should insure it careful protection.

Except during the nesting season, which is very late, the bird is a wanderer, moving about the country in flocks and remaining a shorter or longer time in a given locality according to the abundance of food. The waxwing is a berry eater and its local name of "cherry bird" indicates that it by no means disdains cultivated varieties. Fortunately the bulk of the fruit it takes consists of wild species, especially in winter, when cedar berries are greedily devoured. In the west it includes in its bill of fare mulberries and pepper berries. While insects constitute only a comparatively small percentage of its diet, those eaten include some very destructive species such as scales and the dreaded elm beetle.

How the Blue Birds Came Back

By Joseph Grinnell

Yesterday the snow melted from the top of the great rocks in the woods; the evergreens shading the rocks lost their white load that had been bearing down the branches for a month; the fences straggled their lean legs wide apart, as if it were summer, only the tips of their toes resting on the surface snow; the north roof of the barn fringed itself with icicles that tumbled down by noon, sticking up at the base of the barn in the drifts head foremost; the top dressing of white powder that for weeks had adorned the woodpiles sifted down through the sticks in a wet scramble for the bottom.

But yesterday the south wind puckered up its lips and blew all over everything in sight. The sun shines across the dooryard as it hasn't shone for so long, making a thin coat of mud just at the edge of the chips and around the doorsteps. But what matters? The children run in and out, tracking up the clean floors, taking their scolding with good cheer. Isn't spring here, and don't they hear the bluebird's note in the orchard?

Run and put up some more little boxes on the shed and the fence-posts. Clean out the last year's nests in the hollow trees. Tell the old cat to "keep mum" and "lie low," or she will be put in a bag and dropped to the bottom of the very first hole in the ice. Cats are all right in the dead of winter, when Old Boreas is frantic in his annual mad fit. She can sit on the rug and purr to her heart's content; but when the bluebirds come, if she bethinks herself of the fact, and sharpens her claws against the trunk of a cherry-tree, she would better look out. From the orchard comes a soft, agreeable, oft-repeated note, there is a quivering of wings outspread, and "he" is here. There may be only one or two or six singers. They have left the lady bluebirds in a safe place until they are sure of the weather. If the outlook be bad tomorrow, the birds will retire out of sight and wait for another warm spell. But spring is really here, and the good work of the sun goes on. In a day or two the lady birds appear modestly, of paler hue than the males, quiet, but quick and glad of motion.

Little by little, and by very winning ways, does this gentle blue courier pay his suit of Miss Bluebird. A chance acquaintance sidles up to the same branch on which the two have been sitting. Bluebird courier likes him not; he will have no rival, and so he drives the intruder away as far as the next tree, returning to his sweet and singing a low warble about something we do not understand. Probably he is giving her to understand that he will look to the family supplies, and in all things that pertain to faithful affection will prove himself worthy of her. She consents, taking his word for it, and they set about the business of the season.

Now they must hurry or the wrens will come and drive them out of house and home. One of the bluebirds remains in the nesting-place, or very near it;

for if the house be empty of inmates, the wrens make quick work of pulling out such straws and nesting material as have been gathered.

It may be that a cold snap will come up in a driving hurry after the nesting is well under way. In this event the birds will disappear, probably to the deep, warm woods, or the shelter of hollow trees, until the storm be past, when they will come again and take up the work where they left off.

This sudden going and coming on account of the weather has always been a mystery to those who study the bluebirds. Some imagine they have a castle somewhere in the thickest of the woods, where they hide, making meals on insects that love old, damp trees. Caves and rock chambers have been explored in search of the winter bluebirds, but not a bird was found in either place. They keep their own secrets, whether they fly far off to a warmer spot, or whether they hide in cell or castle.

If the work is not anticipated by human friends, and the nesting-places cleaned out in advance of the birds, they will tidy up the boxes themselves, both birds working at it. What do they want of last year's litter with its invisible little mites and things that wait for a genial warmth to hatch out? House-cleaning is a necessity with the bluebirds. When the nest is done it is neat and compact, composed of sticks and straws with a softer lining. The birds accept what is ready to hand, making no long search for material. Being neighbor to man and our habitations, it uses stable litter.

The three to six pale blue eggs contrast but slightly with the mother's breast. The little ones grow in a hurry, for well it is known that more broods must be attended to before summer is over. Sometimes the nest is placed at the bottom of a box or passageway, and the young birds have difficulty in making their way to freedom. The old birds in such a case are said to pile sticks up to the door, and the little ones walk up and out as if on a ladder!

The mother soon takes to preparing for another brood, and the father assumes all the care of the young just out, leading them a short distance from the mother, and teaching them to hunt insects and berries. The little ones are not blue, as any one may see, but brown with speckled breasts. These speckled breasts of young birds are fashionable costumes for many other than bluebirds. They remind one of infantile bibs, to be discarded as soon as the young things eat and behave like their elders.

The bluebirds are good neighbors, never quarreling nor troubling other birds. In the late fall his note changes to a plaintive one, as if he were mourning for the dear, delightful days of summer-time and nursery joys. It is now that he, with his large family, may be seen on weed stalks in the open country, looking for belated insects and searching for beetles and spiders among the stones.

In darting for winged insects the bluebird does not take a sudden flight, but sways leisurely, as if he would not frighten his treasure by quick movements.

The bluebirds are the morning-glories of our country. They are companions of the violet of spring and the asters in autumn. They belong to the blue sky and the country home and the city suburbs.

The Prairie Sharp-tailed Grouse (*Pedioecetes phasianellus*)

By I. N. Mitchell

Length: 17½ inches to 20 inches.

Range: Central Alaska and northwestern British Columbia east through central Keewatin to central western Ungava, and south to Lake Superior and the Parry Sound district, Ontario.

The sharp-tailed grouse, including under this name its three forms, has an extensive range in the far West, but formerly extended far enough eastward to meet the range of the true prairie hen in Wisconsin and Illinois where, however, it has been nearly if not quite exterminated. As a rule, it inhabited wilder and rougher country than the prairie hen, and never was so abundant. The free use of the shotgun in recent years has taught the sharp-tail some important lessons, and its wariness, seconded by its powerful wings, are sufficient to insure the perpetuity of the species in the Western States in which it lives, profiting by the sad lesson of the prairie chicken and heath hen in the East, afford it the needed protection. Unless, however, its pursuit be carefully regulated, its race will soon be run, and another name added to the lengthening list of extinct American game birds.

The true form of the sharp-tailed grouse is a more northerly species, inhabiting the west and central portions of Manitoba and Alberta. The sharp-tailed grouse may be met with in the same sections occupied by our common prairie chicken, but may be readily distinguished from it by the feathered legs and toes. The Columbian sharp-tailed is fond of wild fruit, so that during the fall they move from the prairie lands into the cranberry marshes to feed.

Prairie sharp-tailed grouse are considerably lighter in color than the prairie chicken, and the underparts are without the barred effect. In winter they hide in the deep snow and tunnel beneath the crust to feed on the sprouts of willows, larches and aspens. Like the ruffed grouse, it frequently roosts in trees, but during the spring and summer months it remains on the ground.

From seven to twelve eggs are laid late in May or early in June. Some sets bear a close resemblance to those of the prairie chicken and are dark olive green. Others are grayish drab sparingly covered with markings of pale brown. I found this bird breeding in the rolling prairies of western Minnesota during the first half of June.

Eggs, ten to sixteen, very small for so large a bird.

Food, insects, especially grasshoppers, hips of the wild rose, stony seeds, willow and birch browse, berries; entire food tends to make tender flesh.

PRAIRIE SHARP-TAILED GROUSE.
♂, life-size.



The House Sparrow

J. O. Skinner

Mr. Thompson, a Canadian, referring, about twenty-two years ago, to the unwise introduction into the United States of this intolerable nuisance when its character and habits were so well known in England, made the following statement: "What wonder that the English farmer stared in blank amazement when first he heard of it, or that he failed to account for the action, except on the assumption that America had been visited by a wave of temporary insanity." We shall attempt to briefly give a few of the facts from which this inference was doubtless drawn.

The house sparrow (*Passer domesticus*), commonly called in America the "English" sparrow, has been known for ages as one of the worst of feathered pests. The name "English" sparrow is misleading, since it would indicate that it originated in England which is not really the case, for its history begins with that of man, and it is referred to by Aristotle and many other European writers on natural history who followed him; in fact, there is reason for believing that it was known to people of whom we have no written history. When writing was invented the sparrow was selected for the hieroglyphic symbolizing enemy, and proofs of its destructive habits have been cited by certain authors showing that it has been the enemy of mankind for more than five thousand years. This prolific little poacher, belonging to the granivorous family (*Fringillidae*), not only does much damage to grain, fruit, and other products of the soil, and disfigures all buildings used by it for nesting purposes, but it is so pugilistic that it drives away many insectivorous birds which are of great benefit to those engaged in agriculture or horticulture. More than any other wild bird, it is attached to human dwellings and is not known to thrive anywhere far away from the habitations or works of men, extending its range in new countries as settlements are formed and lands are cultivated.

It has already fully adapted itself to all continents and has been transported to some of the most distant islands in the Indian and Pacific oceans.

In the fall of 1850, Mr. Nicolas Pike, of Brooklyn, N. Y., brought over from Europe eight pairs of this bird and turned them loose the following spring. For some unaccountable reason, unless it be that they were the recipients of too much kindness, they did not thrive, and in 1852 a second and more successful effort was made. In 1854 and 1858 it was introduced at Portland, Maine, and at Peacedale, R. I., and a few birds escaped at Boston.

During the next ten years it was imported direct from Europe to eight other cities, and in one case 1,000 birds were sent to Philadelphia in a single lot. By 1870, it had become established as far south as Columbus, S. C., Louisville, Ky., and Galveston, Texas; as far west as St. Louis, Mo., and Davenport, Iowa, and so far North as Montreal, Canada, thus gaining a residence in twenty states, the

District of Columbia, and two provinces of Canada, and the end of its migration was not yet. Between 1870 and 1880 it had extended its habitat over 15,000 square miles, and in 1873 Salt Lake City and San Francisco had been reached by this rapid colonizer. Even this extended area did not satisfy its migratory instincts, for, during the next five years it established itself in more than 500,000 square miles of territory, and by 1886 thirty-five states and five territories, practically all of the country east of the Mississippi (except parts of three southern states), as well as eight western states, had been invaded and occupied. Its range of habitation now covered, including nearly 150,000 square miles in Canada, over 1,000,000 square miles, and by 1898 only three states (Wyoming, Nevada, and Montana) and three territories (New Mexico, Arizona, and Alaska) were free. It presumed that by this time it has reached even those districts, and its occupancy of the entire United States is complete.

Besides the United States, New Zealand and Australia have been much damaged by the "English" sparrow, it being regarded in certain Australian colonies as a nuisance almost equal to the rabbit. Although introduced by an acclimatization society on the North Island of New Zealand in 1866, it threatened, sixteen years later, to spread over the whole island, since it appeared in the most inaccessible places, contrary to its usual preference for cities and towns. This was no doubt due to overcrowding, the result of its rapid propagation. Having been carried to Victoria in 1865, it was not long before it discovered and occupied Queensland, New South Wales, South Australia, and Tasmania, although thus far it has been excluded from Western Australia by vigorous legal measures prohibiting its introduction. It will no doubt reach there in due time on its own transportation. It has already migrated to many other parts of the world and may be regarded as a veritable little cosmopolite. It is also present on Mauritius, in the Indian Ocean, and having reached Honolulu twenty years ago, it is fair to assume that if it has not already "prospected" our possessions in the Philippine Islands, it will do so very soon. On the Atlantic side it is found in Bermuda, the Bahamas, and Cuba, and possibly Porto Rico, although its presence there has not yet been reported. Its conduct in Bermuda since it was sent there in 1874 has been just as objectionable as elsewhere, so that, after at first punishing with a prescribed fine anyone who attempted its destruction, the lawmakers themselves were obliged, ten years later, to change their code by placing a legal premium on its extermination. Although the area of the islands is less than 20 square miles, nearly \$3,000 was expended in two years for this purpose with no appreciable effect, so numerous had become the progeny of this prolific profligate.

Although the house sparrow is now very generally distributed over Pennsylvania, it first appeared in the Cumberland Valley (Chambersburg) of that state about 1872, according to the observations of Mr. Davidson Greenawalt, and many have emigrated there from Shippensburg, where one pair was carried from Philadelphia about 1868.

It considers itself at home everywhere, apparently, and evidently comes to

stay wherever found. There is no instance in ornithology where any other bird has multiplied so rapidly or covered such an extensive area in so short a time. This is not altogether surprising when it is remembered how much it has been assisted until recently, by persons unfamiliar with or indifferent to its character and habits.

Not only has it been transported intentionally from place to place, but has been pampered until the mistake was made too manifest to be longer ignored. The number of eggs in a set varies from four to seven, and one pair of birds usually raises four, sometimes five, and even six broods, according to some observers, in a year. It takes very little computation to determine what the results of this extraordinary fecundity would presumably be in a single decade. As it always prefers cities, towns, or villages—in fact, does not go to the country except at harvest times, until it is crowded out by overpopulation following its rapid propagation—it is further protected, by this choice of habitation, against the dangers and hardships by which the increase of many other birds is restricted. As a rule excessive reproduction of a species in the animal kingdom, with its consequent overcrowding, results in disease (epidemics or parasites) which prevent its unlimited multiplication. This is not the case with the house sparrow; it is one of the most vigorous of birds, notwithstanding its numerous progeny. It adapts itself wonderfully to diverse conditions, being able to endure the prolonged heat of tropical summer as well as to survive the protracted cold of a Canadian winter.

In view of the reputation and record of this bird wherever found, and the repeated warnings given to those who were about to import it, the continued interest in it and persistent effort to secure and succor it has been, indeed, difficult to understand, unless in the belief that it was done with the mistaken idea that it would destroy insect pests, particularly canker worms, in the parks of cities, and where it was originally introduced. This error was pointed out at the time, but was ignored; in fact, such a sparrow "boom" existed at one period in this country that parties so infatuated found it cheaper to import direct from Europe than from New York and other places at home. There were two classes who always seemed anxious to have the house sparrow in this country. One was the European part of our population, who, remembering the surroundings of the homes they had left, longed for its familiar chirp and suggestive cheerfulness; the other was that class of people who thought they were getting an insectivore, although they were informed by competent authority to the contrary. Now, there is an insectivorous bird called and known in England as the hedge sparrow, but which is no sparrow at all. It is the *Accretor modularis*, belonging to an entirely different family (*Sylviidae*), the old-world warblers, is related to the thrushes, and, like all of its family, feeds on insects almost entirely, while the sparrow family proper are mainly granivorous, except in the spring and summer when raising their young. that they feed on insects and other soft food. It is reasonable to suppose that the importer of the house sparrow confused it in his mind with the hedge sparrow.

Sommini, in the *Dictionaire d'Histoire Naturelle*, nearly a century ago, writes that sparrows lived "only in society with man, dividing with him his grain, his fruit, and his home; they attack the first fruit that ripens, the grain as it approaches maturity, and even that which has been stored in granaries." He also states that "82 grains of wheat were counted in the craw of a sparrow shot by the writer; and Rougier de la Bergerie, to whom we owe excellent memoirs on rural economy, estimates that the sparrows of France consume annually 10,000,000 bushels of wheat." Reports from France have been confirmed by those from other countries, and the character of the house sparrow has been discussed in France, Germany, and Great Britain for more than four centuries. The damage done by it to agriculture and horticulture has been immense, simply incalculable, for it has been inflicted directly and indirectly.

Besides the direct injury by it to grain crops (wheat, corn, oats, rye, barley, buckwheat, etc.), to fruits, garden seeds, vegetables, and to buds, blossoms, and foliage of trees and vines, is also that resulting indirectly from its molestation of other wild birds which are known to be decidedly beneficial to the garden and farm. Testimony has been secured showing that there are at least 70 kinds of these, including martins, swallows, wrens, and bluebirds, which are interfered with to the great loss of farmers and gardeners. It not only succeeds in many instances in preventing many desirable birds from nesting, by occupying their premises and driving them away, but it even devours their eggs while they are absent finding and feeding on insects.

For fifteen years, say from 1855 to 1870, after its colonization in America, the protests against its introduction were confined to a few well-informed naturalists and to such naturalized persons as had observed its ravages elsewhere. Gradually, however, its advocates and defenders became less numerous. The evidence of the little criminal's guilt was irrefutable, as determined by competent witnesses in the form of innumerable dissections.

Many methods, legislative and otherwise, it is true, have been adopted and pursued in various places to exterminate it, but without success. Pennsylvania enacted the following law June 4, 1883:

SECTION. 1. *Be it enacted, etc.,* That from and after the passage of this act it shall be lawful at any season of the year to kill or in any way destroy the small bird known as the English sparrow.

Many other states have done as much and more. Some towns and counties have offered bounties. One state (Michigan) paid at one time a bounty of one cent per head on English sparrows.

Shooting, poisoning, trapping, and nest destroying have been resorted to without any appreciable effect.

Probably the most promising method of checking its increase would be the systematic destruction of its nests and eggs during the breeding season. This has never been done on a large scale, although a few years ago the city of Boston undertook to clear the nests from Boston Common. About 4,000 nests and 1,000

eggs were destroyed, but after three weeks the work was stopped by order of the mayor.

The northern shrike is known to kill English sparrows, but since it occurs in the United States only in winter, and does not usually frequent cities or towns, its work as a sparrow destroyer would be problematical. The outlook for relief from this pest and nuisance is therefore serious and discouraging.

A letter received by the writer from the late Dr. Elliott Coues, one of the leading ornithologists of his day, relative to this matter, contains the following disheartening statement:

"The multiplication of these early lots and of many later ones has given the invincible foreigner an assured foothold over most of the United States from which he will never be dislodged. The case is paralleled in Australia and New Zealand. I led the 'sparrow war' for twenty years and only surrendered to the inevitable. You may do what you please, shoot or poison as many as you can, more will come to the funeral, and nothing you can do will make any appreciable difference. The case is hopeless."

Although generally considered a town bird it is well known also in the country. Many insectivorous birds are driven away or seriously interfered with by it, and the writer has frequently seen the martin dispossessed, after a desperate resistance, of the premises provided for it by farmers, and ultimately driven away entirely by the sparrow, from its home and neighborhood.

Referring to the advent of the English sparrow, the *Kansas City Journal* quoted some time ago from the *Topeka Journal* as having "an account of the first English sparrows brought to Kansas. In 1864, F. W. Giles conceived the idea of importing some of these birds. He shipped in all 28 of them. They were confined in cages at his place in Topeka until all but five had died. At last the five were turned loose to take their chances of life or death, though Giles had no hope that they would live. They fooled him. They took up their home in the neighborhood. The following autumn there were 12 birds. The second season found 60, and the third summer about 3,000. Then they increased so fast that no account could be kept, and in the twenty-five years which followed they spread all over the West."

The Tufted Puffin (*Lunda cirrhata*)

By Wells W. Cooke

Length: 12 inches.

Range: Pacific coast from California to Alaska.

Four varieties of puffin are found in America.

The bills of the puffin are short, stout and extremely broad vertically, with little horizontal width. The upper mandible projects beyond the lower, producing a resemblance to the parrot. A peculiar comb-like excrescence forms on bill at nesting time, a sex mark. The general color of the bird is black with a conspicuous white faced mask; the long flowing yellow ear tufts are curved inward like the horns of a ram.

Aside from the gulls and terns, puffins are probably the uneasiest birds about their breeding grounds. When not excitedly moving about the rocks, they are generally uttering their piercing notes, often more shrill than the scream of the gull. When the birds enter their burrows they may be heard uttering a sound not unlike a disturbed feline.

Puffins are sociable birds, found in the uninhabited portions of our seacoasts, where they deposit their single white egg in burrows. Both male and female assist in incubation. From the burrow containing the downy young, the old bird may be removed with the hand when the nesting is usually found clinging by the bill to the wing or tail feathers of the parent.

The puffin is an arctic sea bird allied to the auk, having a short, thick, swollen beak. Also related to the grebe and the loon, and more closely to the murre. Owing to the puffin's short wings, he is not a great flyer, but he does fly very well and also uses his wings under water to catch fish, etc.

There are several species, varying from six and one-half to seventeen inches in length. The puffin has a huge triangular, gorgeously colored beak that gives it a look of clownish wisdom. On land it sits up on its short tail in an awkward, solemn fashion. In water it dives with a loon-like rapidity in pursuit of fish on which it feeds. The puffin nests in deep rock crevices, or, failing these and, in fact usually, at the end of a burrow excavated in a sand cliff. A single white egg is placed in a rounded depression about three feet from the face of the cliff. Sentinels are placed to notify a nesting colony of the approach of danger. If an arm be thrust into a burrow to take a surprised puffin, it grasps with its bill, like a parrot, and holds on like an owl. The common puffin is found along the shores of the Atlantic from Maine and Scotland northward. The wings are weak; the tail scanty. The side of the face, breast, and abdomen are white. The rest of the plumage is of a jet black. In size the puffin resembles a small duck.



TUFTED PUFFIN.
? Life size.

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The Black-Headed Grosbeak (*Zamelodia melanocephala*)

By William L. Finley

Length: About $8\frac{1}{4}$ inches.

Range: Breeds from the Pacific coast to Nebraska and the Dakotas, and from southern Canada to southern Mexico; winters in Mexico.

The black-headed grosbeak is one of the birds of my childhood. As long ago as I can remember, I saw him in the mulberry and the elder trees about my home when the fruit was ripe. I did not know his name, but I knew him by his thick bill, his bright colors and his high-keyed call-note. One has little trouble in getting acquainted with a bird of such marked individuality. The black head, the red-brown on the breast brightening to lemon-yellow below and under the wings, the black tail and wings with two white wing-bars, are distinctive of the male. The female is more demurely dressed in dark brown and buff. But the garments are not the only distinctive features of the black-headed grosbeak.

For several summers, I watched a pair of grosbeaks that lived in a clump of vine-maples on the hillside. The same pair, no doubt, returned to the thicket for several years.

One day I stopped to look for a bird that was caroling in one of the maples. I saw the grosbeak mother singing her lullaby as she sat on her eggs. It looked to me so like a human mother's love. Few birds sing in the home. However much they wish to, they are afraid. As John Burroughs says, it is a very rare occurrence for a bird to sing while on its nest. But several times I have heard the black-headed grosbeak do it. How the grosbeak took up such a custom. I do not know, for birds in general are very shy about attracting attention to the nest.

As a rule, he builds a loosely constructed nest of twigs, lined with fine roots. In the northern states, the nests are built in dogwoods, vine-maples and alders; while, in the south, the bird often nests in chaparral, willows and other trees. The eggs are three and four in number, and are pale blue thickly spotted with brown.

The black-headed grosbeak has a rollicking song, like that of the western robin and western tanager. I have, at times, found it difficult to distinguish the song of the grosbeak and that of the tanager. The black-headed grosbeak is brilliant both in dress and song. I loved to watch the male that lived in the clump of maples. He used to perch at the very top of a fir sapling near the nest, to stretch his wings and preen his tail, as if he knew his clothes were made for show. Early in the morning he showed the quality of his singing; later in the day it often lacked finish. The tones sounded hard to get out, as if he were practising,—just running over the notes of an air that hung dim in his memory. But it was pleasing to hear his practice. The atmosphere was too lazy for perfect execution.

We had a good chance to study and photograph a pair of black-headed grosbeaks that nested near my home. We were soon on such intimate terms with

*both birds that we could watch them at close range. Nature has given the grosbeak a large and powerful bill, to crack seeds and hard kernels. It seemed to me this would be an inconvenience when it came to feeding children. If it was, the parents did not show it. The mother would cock her head to one side, so that her baby could easily grasp the morsel, and it was all so quickly done that only the camera's eye could catch the way she did it. She slipped her bill clear into the youngster's mouth, and he took the bite as hurriedly as if he were afraid the mother would change her mind and give it to the next baby.

The three young grosbeaks left the nest the morning of July 6. They were not able to fly more than a few feet, but they knew how to perch and call for food. I never heard a more enticing dinner song. The minute a youngster's appetite was satisfied, he always took a nap. There was no worry on his mind as to where the next bite was coming from. He just contracted into a fluffy ball, and he didn't pause a second on the borderland. It was so simple. His lids closed, and it was done. He slept soundly, too, for when I stroked the feathers of one, he didn't wake, but, at the sound of the parents' wings, he awoke as suddenly as he dropped asleep.

I have watched a good many bird families, but I never saw the work divided as it seemed to be in the grosbeak household. The first day I stayed about the nest, I noticed that the father was feeding the children almost entirely, and whenever he brought a mouthful, he hardly knew which one to feed first. The mother fed about once an hour, while he fed every ten or fifteen minutes. This seemed rather contrary to my understanding of bird ways. Generally the male is wilder than his wife, and she has to take the responsibility of the home. The next day I watched at the nest, conditions were about the same, but I was surprised to see that parental duties were just reversed. The mother was going and coming continually with food, while the father sat about in the tree-tops, sang and preened his feathers leisurely, only taking the trouble to hunt up one mouthful for his bairns to every sixth or seventh the mother brought. To my surprise, the third day I found the father was the busy bird again. Out of eighteen plates exposed that day on the grosbeak family, I got only five snaps at the mother, and three of these were poor ones. The fourth day I watched, the mother seemed to have charge of the feeding again, but she spent most of her time trying to coax the bantlings to follow her off into the bushes. It was hardly the father's day for getting the meals, but, on the whole, he fed almost as much as the mother, otherwise the youngsters would not have received their daily allowance.

The Lapland Longspur (*Calcarius lapponicus*)

By W. Leon Dawson

Length: 6¼ inches.

Range: Northern portions of the northern hemisphere, breeding far north; in America south in winter to the northern United States, abundantly in the interior, to Kansas and Colorado, irregularly to the Middle States.



Only now and then does one come upon a company of these hardy Laplanders, for their principal winter range is further west. They are to be found industriously gleaning fallen weed-seed from the ground, pastures, stubble fields, and waste places, or moving about in rather compact flocks through the air. Not infrequently small numbers of them join a winter band of horned larks at table in some choice feeding lot for cattle. At such times they move about freely among the other birds, but are readily distinguished from them by their black heads.

If one would get the full effect of longspur's diagnostic mark, he should creep on hands and knees over a rolling stubble-field on a chilly April day. It will heighten the effect, not of the bird's color, but of the observer's boreal sensations, if a sullen sky be added, and little pellets of sleet be dropped here and there over the field. With eyes agog and glasses in readiness, you advance cautiously. There is nothing but clods and stubble in sight. You feel sure that there are birds all about you, for you saw them settle right there. At length, a long way off, a single anxious black head is descried as it is thrust up into view; but before you level on it, one, two, three, a dozen birds, are up and off, who were within a rod of you. But by and by (it may be only after days) the clods are differentiated, and some kindly resolve themselves into birds' heads, at close range. Even the stubble is gracious, and gradually discloses skulking females of obscure coloration, and who had only been known to you before as voices and things in the air. The chirruping rattle of this bird has, somehow, the power of calling out all the wild instinct of a man, the primitive, wind-forged, and untamable Norse core, which lies ill at ease beneath this thin veneer of spoon-fed civilization. It is like a rune from the elder Edda, challenging the unspoiled spirit to arise and do battle with the fiery flying drake.

According to Mr. E. W. Nelson, who found this species breeding abundantly on the grassy flats near St. Michaels, Alaska, the birds arrive there early in May, while the ground is still largely covered with snow, and by the middle of that month they are common. "The males, as if conscious of their handsome plumage, choose the tops of the only breaks in the monotonous level, which are small, rounded knolls and tussocks. The male utters its song as it flies upward from one of these knolls, and when it reaches the height of ten or fifteen yards, it extends the points of its wings upwards, forming a large V-shaped figure, and floats gently to the ground, uttering as it slowly sinks, its liquid tones which fall in twinkling succession upon the ear, and are, perhaps, the sweetest notes that one hears during the entire springtime of these regions. It is an exquisite jingling melody, having much less power than that of the bobolink, but with the same general character, and, though shorter, it has even more melody than the song of that well-known bird. The nests are placed on the drier portions of the flats; a hummock or tuft of grass is chosen, or perhaps a projecting bunch of dwarf willow stems, and, as one comes directly upon it, the female usually flutters off under one's feet."

Shall We Save the Quail from Extermination?

R. W. Shufeldt

Recently, a number of our periodicals have published the suggestion that our quails be placed on the song-bird list, to be protected in the same manner as the latter by federal laws enacted for the purpose. In my opinion, this is an admirable, not to say highly necessary proposition; and you may take my word for it that, unless this is done, and done within the next few years, all of our species of quails will be reduced to the very verge of extinction and in due course entirely exterminated. Now we may look for the sportsmen and hunters of the country to make a vigorous protest against any such legislation being put into effect; they will probably rise to a man and attempt to prove that the present state and federal laws, enacted for the protection of our game-birds, are so framed that through their operation quails are not only not being reduced in numbers all over the country, but that they are actually upon the increase.

I have been a hunter of quails and a student of ornithology for over half a century; not in any casual way either, but seriously, continuously, and always with a definite purpose in view. Those who know me best will be the last to say that I would support such an act as is proposed above, unless I was absolutely certain that the necessity for it had been more than amply demonstrated. Moreover, I would be the last to wish to deprive the sportsmen of the country of the pleasure they have in shooting quails every season, and the hundreds of others who trap them all the year round!

Not only are our beautiful bob-whites of the eastern half of the country being reduced steadily in numbers every year, but the ten species and sub-species of the western forms are being practically exterminated with marked and certain rapidity. Our bob-white is one of the grandest little birds that exists in our entire avifauna, and the various forms of quails or partridges, which are found in the Pacific tier of States and elsewhere in the West, stand among the most beautiful species that we have of the feathered world. I have had these birds alive on many occasions, and I have photographed from life not only specimens of our bob-whites, but also several species of the western forms, as the plumed quail (*O. p. plumifera*); the chestnut-bellied scaled quail (*C. s. castanogastris*); the California quail (*L. c. californica*), and others. Two of my photographs selected from this list are here reproduced as illustrations, one being of the Texan bob-white and the other of the California quail. They were taken the size of life, and are faithful representations of these most beautiful birds. To return, however, to the matter of the gradual destruction of our quails, before I touch upon the value of these birds to the American farmer and to agriculturists generally, I would like to point to the time when, three-quarters of a century ago, this system of extermination commenced. Speaking of the eastern bob-white, Wilson, writing in the early part of last century, tells us that "They remain



LARK LONGSPUR.
(*Calcarius lapponicus*)

with us the whole year, and often suffer extremely by long, hard winters and deep snows. At such times, the arts of man combine with the inclemency of the season for their destruction. To the ravages of the gun are added others of a more insidious kind; traps are placed on almost every plantation, in such places as they are known to frequent. These are formed of lath, or thinly-split sticks, somewhat in the shape of an obtuse cone, laced together with cord, having a small hole at top, with a sliding lid, to take out the game by. This is supported by the common figure 4 trigger; and grain is scattered below and leading to the place. By this contrivance, ten or fifteen have sometimes been taken at a time."

These traps are still in use in many parts of the South, while still more ingenious ones are employed throughout all the northern states. Simply enormous numbers of our quail are thus annually destroyed—in some sections utterly exterminated. So common were these birds in Wilson's time, that they brought only from twelve to eighteen cents apiece in the Philadelphia markets. There is another thing to be considered, however; the guns used in these days by sportsmen in hunting quail are far more certain and fatal than the old flint-lock, muzzle-loading ones used to be in the days of Wilson and Audubon.

A few days ago I was in the Center Market of Washington, D. C., and there I saw boxes of the birds—150 in a box—for sale, while one man had three flour-barrels full of them! This sort of thing cannot go on forever without extermination being the sure and final result.

But now listen to Audubon's account, and note how they destroyed the bobwhites in his day (1832). "These birds," he says, "are easily caught in snares, common dead-falls, traps and pens, like those for the wild turkey, but proportionate to the size of the bird. Many are shot, but the principal havoc is effected by means of nets, especially in the western and southern states." Then he gives another account of how "a number of persons on horseback, provided with a net, set out in search of partridges, riding along the fences or briar-thickets, which the birds are known to frequent."

It will not be necessary to quote the rest of his story *in extenso*, for it is too long for my present purpose; but I may say, in support of the fact that the quails are not nearly so numerous now as in his day, that he closes the tale with the following words: "In this manner, fifteen or twenty partridges are caught at one driving, and sometimes many hundreds in the course of a day. Most netters give liberty to a pair out of each flock, that the breed may be continued." Mind you, *one pair* out of each flock—where they captured "*many hundreds*" in a day! The chances of "continuing the breed" by any such magnanimous procedure would have about as much effect as would the sticking up of little placards in the fields and thickets by the sportsmen for the quails to read, begging them to lay double the number of eggs to the setting, and to raise at least six or seven broods to the season!

Perhaps the most glaring example of the rapid extermination of several of

our most beautiful as well as useful birds of this family is now going on in California and in other western States where these species are found. As I pointed out above, we have a number of species of these partridges in the aforesaid region, and I very well remember the accounts of their immense covies, which explorers and naturalists brought back in their journals during the early 60's. Mr. James Jenkins, who was my instructor in taxidermy in 1866 and on, had collected a beautiful series of the plumed partridge in California; he told me that he had seen over a thousand of them in a single flock, and that they were extremely abundant in certain parts of that state.

The Eskimo Curlew (*Numenius borealis*)

By W. Leon Dawson

Length 12 to 14½ inches.

Range: Breeds on the barren grounds of northern Mackenzie; winters in Argentina and Patagonia.

The Eskimo curlew is an interesting example of the rapidity with which a game bird, apparently numerous enough to defy fate, may be suddenly swept off the face of the earth. Forty years ago, and even less, as many witnesses besides myself can testify, Eskimo curlews might often be found in the markets of Boston, New York, and other large eastern cities, and apparently no one then had a suspicion that the species was nearing its end. Audubon, speaking of his experience in Labrador in 1833, likened the numbers of this curlew to the flocks of passenger pigeons, and as late as 1860 Packard noted a flock in Labrador which was perhaps a mile long and nearly as broad. Not many years ago the fishermen of Labrador and Newfoundland were salting them down by the barrelful for winter's consumption. Because of its uncommon fatness and the excellence of its meat, it was generally known in New England as the "dough bird." No doubt these qualities were the chief cause of the curlew's extinction. Thus the very qualities that should have insured the perpetuation of the species for the benefit of posterity led to its destruction by our improvident selves. The bird is spoken of here as extinct since, to all intents and purposes, it is so, although a few probably still survive. The lesson to be drawn from the destruction of the curlew and the passenger pigeon is that in the case of any given game bird we cannot tell exactly when the danger line is crossed and the safety of the species begins to be threatened. The untimely end of the curlew and pigeon shows that it is the part of wisdom to apply the brakes before the bottom of the hill is reached—in other words, to adopt effective preventive measures before it is too late.

Greater abundance atones for the smaller size of this curlew in regions



ESKIMO CURLEW.
Numenius borealis.
About $\frac{1}{2}$ Life-size.

where it is regularly found at all. It moves up the Mississippi Valley in immense flocks, deploying over the prairies, and keeping company with such birds as the Bartramian sandpiper and the golden plover. When feeding in extensive companies the birds keep up a conversational chattering, which Coues likens to that of a flock of blackbirds.

In Labrador, where these curlews have been most closely studied, they are found to feed largely upon the cow berry (*Empetrum nigrum*), so greedily, in fact that their plumage often becomes stained with its purple juice. Upon this fare, together with a generous allowance of sea food in the shape of snails, the birds become excessively fat, and are in prime condition for the unreluctant gunner in August or early September.

April Rain

O the dashing, April rain
Making crystal-clear the pane
Of the window in my lilac-scented room!
The quick flashing of bird-wings
And the freshened glow of things
Cause my soul to rise in triumph o'er the gloom.
—*Millie Noel Long.*

The English Sparrow

By Saidee Gerard Ruthrauff

My eyes are filled with star-dust and the wonder of the Spring,
And they see the plain brown sparrow as a shining, glorious thing!
O, I know he's dull of color, and I know he doesn't sing;
Yet the Love that clothes the sunset put the color on his wing,
And the Mind that thought the star-dust and the wonder of the Spring
Put Himself into the sparrow, for He lives in everything,
And He must have had a reason why the sparrow doesn't sing,
And He must have had a reason when He made him plain of wing!

Comedy and Tragedy in Bird Life

By Edward B. Clark

In the bird's year the season of song is the season of tragedy. The wonder is that during the nest-building time birds have the heart to sing at all. Danger is ever present, and it is probably not an exaggeration to say that disaster attends at least one-half of the attempts of the songsters to rear their young. There are so many casualties among the bird homes that the nesting season holds for the field student rather more of pain than of pleasure. It has struck me many times that the birds must feel that the whole world is against them when they are trying so patiently and so bravely to see that their kind does not perish from the earth. From the moment that the first egg appears the shadow of danger is across the threshold of the little home. There are the perils of wind and flood, of egg-loving snakes, and of egg-collecting boys. A little later, when the young appear, there is danger from prowling cats and looting owls, and from men nest-robbers, who pretend to think that the proper sphere of a wild bird lies within the limits of a cage.

The books tell us that many species of birds build their nests near the habitations of men because of the protection that is afforded by such locations. The theory is, that owls, hawks, and snakes avoid the vicinity of civilization, and thus the nesting birds are relieved from the fear of depredations of these natural enemies. There is another side to the question, however. The minute that the bird places its home on the pillar of the porch, in the lilac bush of the garden, or in the maple at the doorstep, it invites destruction for itself and young at the claws of the family cat, a creature which, unfortunately, few households are without. The very openness of the nesting sites chosen makes of the eggs or of the young a temptation to the badly trained boy, who nine times out of ten finds himself unable to resist. As a deduction from observations that have extended through many nesting seasons, I don't hesitate to say that I think the part of wisdom belongs to the bird who builds in the wilds and gives man, cats and boys a wide berth.

It is a curious thing that, all things being apparently equal, some of the birds that nest in the haunts of men have much better success with their families than have others. The bluejay, one of the characteristic birds of the Middle West, is handicapped in his struggle for existence by his brilliant plumage. Notwithstanding this, the jay abounds and will continue to abound unless his traits of character undergo a radical change. A jay, building in an evergreen on one side of a doorstep, will be rejoicing in five healthy offspring able to fly and to care for themselves, while the robin, building in the maple on the other side of the doorstep, is bewailing the disappearance of its last fledgling into the mouth of a cat. Accidents to jays' nests are rare. It builds as strong a structure as does the robin, and as a rule, Madame Jay insists that the young jays shall stay in the

nest until their wings are strong and full feathered. Robins have not the same excellent control over their babies. The young robin, like the young crow of the children's story, gets restless and wants to see the world at a time when the only journey it can make is a high and lofty tumble from the nest to the ground. You may pick up a young robin, put it back in the nest, and you will be called upon within five minutes to repeat the operation. The distress of the old birds, when a youngster tumbles out, is pitiful. Possibly in the course of a few eons they may discover the secret of parental control. At one time I had under observation five robins' nests and six jays' nests. Five of the jay broods were led forth into the world in safety, while disaster came to four of the robin households. It is curious to note that the pair of robins that succeeded in raising a brood built the nest on a crossbeam between two pillars of a piazza which was frequented by many people all through the day. It was a cat neighborhood. The nest was so placed that Tom and Tabby could not get at it, though they watched it daily from every vantage point. This pair of robins had more sense than most of the tribe. There were five robin children in the nest. When the time came for them to leave, the male robin took a perch just outside the nest and coaxed the two strongest of the fledgling birds to leave. They stood on the edge of the nest while the father took three or four short flights by way of example. Finally the two little ones launched out together, and with their father at their side they succeeded in making the first flight carry them a distance of fully forty yards. They plumped to the ground pretty hard, but in a minute they recovered, and their father soon urged them to another effort, this time upward to the safe retreat of a heavy foliaged tree. The other three young ones remained in the nest twenty-four hours longer, and were then led forth by the mother. For two weeks the brood remained in the vicinity of the nest, the father caring constantly for the two that he had elected to take in charge, while the mother looked after the other three. I watched the birds constantly, and never saw either of the parents feed a youngster that was under the other's care. There was something strikingly manlike in the male bird's distribution of the labor. He gave his wife the three requiring the most attention and took for his own share the two lusty youngsters.

One robin's nest which met with disaster was placed on the elbow of a rain-pipe which was supposed to carry the rain-water from the eaves of the Presbyterian Church at Highland Park. The chances are that robins never made a study of rain-water spouts. The experience of the ordinary householder is that water pours out of them at every place excepting where it is intended to pour out. The Presbyterian pipe was no exception to the general rule. When the robins' nest was well completed, "the rain descended and the floods came"; all the water from the eave-trough poured down the pipe to a point about a foot above the nest on the elbow, and then shot out through a hole and washed the little habitation with its burden of eggs to the ground below. We all know the poetical tale of the sparrow that built its nest in the spout. We know how the "bloomin'

rain-storm washed the bloomin' sparrow out." We also know that when the rain stopped the sparrow went up the spout again and there fixed its habitation, awaiting another flood. I can readily believe this story of a sparrow. The robins who lost their home in the north-shore thunder-storm started to rebuild their nest on the same rain-pipe elbow before the pools in the street were thoroughly dry. Doubtless they felt that the shadow of the church made their home sacred from the attack of man, and they were willing for the safety thus secured to run the risk of more showers. Their second home was washed down within a week. They went elsewhere, and let it be hoped were spared from the dangers of both field and flood.

Chipping sparrows, robins, catbirds, bluejays, and many of the other bird species which seek man's society do not resent a certain amount of prying into their household affairs. None of the birds named will think of deserting its home simply because you take a daily peep at the eggs or occasionally undertake to help the parent birds out in the matter of feeding the young. Confidence when once established is lasting. There are some birds, however, which occasionally build under the shadow of our walls who resent human curiosity and will desert their nests at the first appearance of supposed danger. The rose-breasted grosbeak frequently builds in the garden or in the trees that shadow the sidewalks. The rose-breast is a beauty. His life in the spring is one continuous song. As someone has put it, he wears a blush rose in his button-hole, and is the Beau Brummel of the birds. The rose-breasts build a flimsy nest. It has but little more stability than the nest of the mourning dove. They are as jealous, however, of the approach to the little home as though it had taken a lifetime in its rearing. When a pair of the birds build near the house they must not be allowed to know that the nesting site has been discovered. If they see a person looking at their home they will often desert instantly. A pair of robins built a nest in a tree directly in front of the residence of a bird-loving friend. One day he saw some school-boys trying to climb the tree to get at the robins' nest. He drove the boys away. A few days afterward he discovered that a rose-breasted grosbeak was building its nest in the tree not far above the home of the robin. Then the fear came that the boys would come back and ravage both nests. So the birds' friend took a hammer and drove a lot of wire nails into the trunk of the tree, thus precluding the possibility of climbing it. "I may lose the tree," said the nail-driver, "but I hope to save the birds." He was hitting the last blow with the hammer when the grosbeak came with a straw in its mouth. It saw the man standing below, dropped its building material, and fled. It never came back. It is something more than a pity that the birds cannot at first sight tell friend from foe. The robin sat on the nest all through the nail-driving without as much as fluttering a feather.

In the spring of 1899 I found the nest of a vesper sparrow in a Highland Park field. The bird clung to its charge until I almost stepped on it. Then it left the nest and gave an acrobatic performance which, had its motive not been

known, would have been laughable. The bird was counterfeiting injury and an inability to fly in the endeavor to draw the supposed enemy from its treasure. This is a favorite trick of many members of the sparrow tribe, and that it is at times successful there isn't a doubt. The vesper sparrow that was performing for my benefit spread one of its wings out and dragged it along the ground as though it were broken. The little creature propelled itself with its other wing, which it beat violently against the grass blades. Finally, when it had reached a point about ten yards from the nest, it spread both wings to their fullest extent and skimmed the surface of the green pasture as though it were using a pair of sculls. Eventually it flew away to join its mate, who was scolding vociferously near at hand. So far from doing violence to the home of that devoted mother, I performed a service for her by removing from the nest the egg which a cow-bird had deposited there for the vesper sparrow to hatch. The hatching of this parasite egg with the hatching of those of the sparrow itself would have meant, doubtless, that the young cow-bird, by its superior size and great greed, would have received the major part of the food to the sacrifice of its foster brothers and sisters. One morning, when on my way to pay a visit to the vesper sparrow's nest, I stopped at the fence and looked across the field to the spot where I knew the little home was hidden in the grass. The field was pasture-land, and a cow was grazing within a few yards of the sparrow's nest. It drew dangerously near to the grass clump where the bird was brooding, and in another instant I saw the sparrow leave the nest and perform exactly the same series of gymnastics for the cow's benefit that it had a day or two before for mine. Whether this mother bird thought she could lure away from her home, through motives of curiosity, this terrific horned beast or not, I cannot say, but the effort was made in apparent good faith. It is hard to be obliged to make a tragedy out of that into which comedy has so largely entered. Before the young vesper sparrows had been three days out of the shell one of the grazing cattle put an end to the little ones' lives with a misplaced step. Much more than a month later I saw a pair of vesper sparrows feeding four fledgling young in the same field. I believe that the plucky little mother, rising superior to disaster, had succeeded finally in raising a promising family.

No bird better typifies the wild life of the woods than the ruffed grouse, or partridge, as it is commonly called. Flushed from its forest retreat in the autumn, the whirl of its wings through the falling leaves is like the whirling of a belted mill-wheel. The rush of its flight through the brush strikes a sort of terror to the novice sportsman who stands with gun in nervous hands, nor thinks of shooting till the bolt-like pace of the bird has put it well beyond danger. This is the ruffed grouse of the time of the ripened shellbark and of the blood-red sumac. Then the bird's every effort is for self-preservation. In the earlier year, almost before the pulsing fullness of the spring has passed, the bird that flees in the fall at the approach of the despoiler stays to dispute his right to intrude, and if necessary to give him battle. Others have told the story of the attack that the

female grouse will at times make upon the man who stumbles upon her brood in the heart of the woods. It has fallen to the lot of but few to witness the exhibition that this wild bird gives of mother-love and courage. It was my fortune once to have an experience with a mother grouse who was caring for a brood of ten or twelve downy young in the depths of a ravine on the government reservation at Fort Sheridan. There are not many ruffed grouse left in the country along the lake. The birds have been shot by market hunters and others until the hearing of a log drumming in the spring is an ornithological epoch. I had been at target practice on the Fort Sheridan rifle range, and was on my way from the firing point to relieve a man behind the butts. To reach the objective point I was forced to go through dense underbrush to the bothom of a deep ravine. I was just about to jump the little brook which flows at the base of the shelving ravine bank when I heard a clucking and hissing noise. Before time was given to me to realize what living thing was present, there was a rushing sound, followed by the impact of a heavy body against my knee. It was a case for a minute of both mental and physical stagger. Recovering enough to look down, I saw two feet in front of me a hen grouse bridling, and with her feathers ruffled up until she looked as big as a buff-cochin. At the same time I became dimly aware that some little creatures, not much bigger than bumblebees, were scurrying for cover. In a second Dame Grouse returned to the attack. She made the onslaught like a game-cock. My knee was the objective point, and this she buffeted with her body and struck with her beak. I had a Springfield rifle in my hand, but of neither rifle nor man was that valiant mother afraid. Had she but known, it was admiration rather than resentment that was excited by her attack. She prepared herself apparently for another assault, and then suddenly changing her mind, she went whirring away through the clustering trees. She had held the attention of the intruder until her little ones had time to secrete themselves under the fallen leaves. I hardly dared stir for fear of treading on one of the innocents. I picked my way carefully, and when I reached a point half-way up the ravine's side, I heard the mother grouse calling her chicks to the shelter of her ample wings.

Feathered Folk Are Worth Knowing

By Frank Crane

Do you know your bird neighbors? If not, why not get acquainted? It will repay you, not only in that delight which all knowledge gives, but in a wider sympathy with nature and her wondrous lives, in a cheering acquaintance with the shy brotherhood of winged things, in a spiritual companionship with the little people of the air, who always symbolize to us hope, optimism and the brighter qualities of existence.

To take your gun and kill the air neighbors is brutal, stupid—and you ought to be ashamed of it. Take a pair of opera glasses instead and do a little “watchful waiting” in a corner of the shrubbery. Learn to know the various uniforms of the aerial companies, the blue, gray, yellow and red; the various tufts, tails and topknots, that are vastly more interesting than soldiers’ regalia on the battlefield or women’s hats on the Champs Elysees.

Speaking of hats, is it not incredible that countless valuable insect eating birds, who are our greatest defense against the worms and bugs that destroy a billion dollars’ worth of crops annually in the United States, are destroyed that their feathers may decorate woman’s headgear?

After you come to know your bird friends, take measures to provide for their comfort. Be a bird landlord. Put up houses for them. You will get an amazing rental in the spectacle of happy lives, not in money, but in cheeps and chirrups, glimpses of fluttering wings through the sunny air, and a knowledge that in many a cozy nest are little beings which, were it not for your charity, might be devoured by ferocious cats or frozen stiff or dead with hunger by the roadside.

Martens will live, like human beings, in skyscrapers or apartment houses in miniature. Jenny Wren likes seclusion, away from prying neighbors; a single gourd or tomato can may do, and she has been known to bring up her little ones in a sprinkling can or a mail box. The log cabin made from a hollow limb is preferred by the flicker and nuthatch families. Robins and phœbes go in for open sleeping porches and bluebirds like roof gardens, whence they can easily fly out and in.

“Turn the openings of the birdhouses away from the prevailing north winds,” says an authority, “and don’t forget to sheathe the posts or poles that support them with tin or galvanized iron to prevent cats from climbing up.”

If you want specifications for building birdhouses you can get them free by applying to the United States government at Washington.

Help the little wanderers that are being destroyed by their natural enemies, the hunters; though there’s nothing said in holy writ about being rewarded for this in heaven, you may be sure that you will get your reward on earth each day by an added interest in life, by the pleasure of protecting “our little sisters, the birds,” and at the same time doing real service for human beings.

The Cowbird (*Molothrus ater*)

By Charles Bendire

Length: $7\frac{1}{2}$ to 8 inches.

Range: United States from the Atlantic to the Pacific, north into southern British America, south in winter into Mexico.

The Cowbird ordinarily arrives in good-sized flocks in the Middle states, from its winter home in the south, during the last half of March. In the more northern states it rarely comes before the first week in April, and more frequently after the middle of this month. The males predominate in numbers over the more plainly colored females, and generally precede them by several days. Soon after arriving, these flocks commence to break up and scatter in small companies of from six to twelve individuals and disperse generally over the country. It prefers more or less cultivated disertics, especially river valleys, where other birds are abundant, and rarely penetrates far into heavily timbered sections or mountainous regions, excepting in Colorado, where it has been met with at altitudes up to 8,000 feet.

The food of the Cowbird consists principally of vegetable matter, such as seeds of different kinds of noxious weeds, like ragweed, smartweed, foxtail, or pigeon grass, wild rice, and the smaller species of grains, berries of different kinds, as well as of grasshoppers, beetles, ticks, flies, and other insects. Taking its food alone into consideration, it does perhaps more good than harm.

While the Cowbird is fairly common in most of the states east of the Mississippi river, it is far more noticeable in the regions west of this stream, although perhaps not much more abundant. In the prairie states this is especially the case, and one will rarely see a herd of cattle there without an attending flock of Cowbirds, who perch on their backs, searching for parasites, or follow them along the ground, hunting for suitable food. They generally act in concert; when one settles on the ground the others follow shortly afterward, and if one starts to fly, the remainder take wing also. Their flight resembles that of the red-winged Blackbird.

In the spring of the year several males may frequently be seen perched on some fence rail or the limb of a tree, each endeavoring to pour out his choicest song. This consists of various unreplicable guttural sounds, uttered while all the feathers are puffed out, the head lowered, and evidently produced only by considerable effort on the part of the performer. One of their call notes sounds somewhat like *spreele*, others resemble the various squeaks of the red-winged Blackbird, and all are difficult to reproduce on paper.

It is a well-known fact that the Cowbird is a parasite, building no nest but inflicting its eggs usually on smaller birds, leaving to them the labor and care of rearing its young.

The laying season rarely begins before May 15, and continues for about



two months. During this time probably from eight to twelve eggs are laid by each female, or the equivalent of two broods, and I believe that several days elapse between the laying of each egg. It is not likely, and this is very fortunate indeed, that more than half of these eggs are hatched, as some are occasionally dropped in old or abandoned nests, or even on the ground; others are laid in just completed nests which the rightful owner abandons when it sees the parasitic egg.

When the Cowbird is ready to lay, she quietly leaves her associates and begins to search for a suitable nest, usually selecting one of a species smaller than herself, but if such a one is not readily found, a nest of a larger bird will answer, especially if the full complement of eggs has not been deposited in it. She does not forcibly drive the owner from the nest, but watches her opportunity to drop her egg in it when the nest is unguarded.

It is not unusual to find some of the eggs of the species imposed on, thrown out of the nest to make room for those of the parasite, nor to find minute punctures in the shell of some of the remaining eggs. This is possibly done on purpose by the Cowbird with her beak, to keep the eggs from hatching, or with her sharp claws while sitting on the nest and depositing her own egg. I am inclined to attribute this puncturing to the latter cause, but there is no doubt that the Cowbird sometimes throws the rightful owner's eggs out of the nest purposely, to increase the chances of its young for food and growth.

It is astonishing how many different kinds of birds are thus imposed upon by the Cowbird. A list of ninety species of these victims has been prepared. Among these the nests of the phoebe, song sparrow, towhee, indigo bunting, ovenbird, and yellow-breasted chat, seem to be most frequently selected, and these usually contain also more of the parasitic eggs than a majority of the others.

The egg of the Cowbird usually hatches in from ten to eleven days, generally in advance of those of the foster parents, and the growth of the young interloper is rapid. The observations made by Mr. M. A. White upon the egg of a Cowbird in the nest of the chipping sparrow illustrate this life history.

About the nineteenth of June Mr. Cowbird emerged from his prison walls, large and vigorous. A day later a little sparrow came forth from his delicate shell, but much smaller and exhibiting less strength than his foster brother. The other egg of the sparrow failed to hatch.

The daily increase in size of the Cowbird was surprising, while his younger companion seemed rather to diminish than to enlarge, until finally at the end of three days the sparrow died—evidently for want of food as the Cowbird, being larger, devoured everything that came in contact with his capacious mouth.

The untimely end of the rightful heir was but gain to the usurper as he now received the whole attention of the parent birds. Nature having now, at the early age of seven days, provided him with a respectable dress he was no longer contented to remain within the nest, and he betook himself to the

branches of the tree in which the nest had been placed. But soon this area became too limited for his ambitious spirit, for at the end of the second week he was flitting from bush to bush, his foster parents providing for him all the while. Two weeks more and he was a full-pledged bird.

The fate of nearly all the young birds which have the misfortune to be hatched with the Cowbird for a companion seems to be similar to that of the sparrow thus described. I have yet to see a nest containing young birds of both species more than a few days old; by that time the rightful offspring are either smothered or crowded out of the nest by their stronger foster brother, or starved, and he then absorbs the entire attention of the parents. Only in cases where these are as large or larger than the impostor is there likely to be an occasional exception to this rule.

It can readily be seen what an immense amount of harm a Cowbird causes in the economy of nature, granting that only a single one of its eggs is hatched in a season. A brood of insectivorous and useful birds is sacrificed for every Cowbird raised; and the Cowbirds are certainly not diminishing in numbers.

The eggshell of the Cowbird is compact, granulated, moderately glossy and relatively strong. The ground color varies from an almost pure white to grayish white, and less often to pale bluish or milky white, and this is usually covered over its entire surface with specks and blotches varying in color from chocolate to claret brown, tawny and cinnamon rufous.

The Short-Billed Marsh Wren (*Cistothorus stellaris*)

By Lynds Jones

Length: 4 to 4½ inches.

Range: Eastern United States, north to southern New Hampshire, southern Ontario, southern Michigan and southern Manitoba, and west to the Plains, winters in South Atlantic and Gulf States.

Description.—*Adult*: Above everywhere streaked or barred with blackish, ochraceous, and white; a little clearer ochraceous on hind neck; wings and tail heavily barred, the former only on exposed webs, a very faint, pale superciliary line; below white, clear on throat and belly, washed with ochraceous-buffy on sides of neck, across breast, and on sides; flanks and crissum darker ochraceous or tawny; bill short, dark brown above, pale below; culmen slightly decurved; feet light brown.

Recognition Marks.—Pygmy size; heavy dorsal and coronal streaking in three shades distinctive; unbarred below as compared with preceding species; bill much shorter than that of the next species.

Nest, near the ground, in a tussock of grass—a globe formed by bringing the live grass-blades together, and interweaving with vegetable fibres and dried



SHORT-BILLED MARSH WREN.
Life-size.

grasses; lined with plant-down; entrance in side. *Eggs*, 6-8, pure white, unmarked—unique in this respect in the family. Av. size, 64 x .49 (16.3 x 12.5).

It has never been the author's good fortune to meet with this Wren but once, and then during migrations, when close study was impossible. It is at best a rare visitor with us, and nothing has recently come to light regarding its nesting in the state.

Mr. Ernest E. Thompson says, "This is less a species of the deep water marshes than is the long-billed member of the genus, and often it will be found in places that are little more than damp meadows. It is remarkably mouse-like in habits and movements, and can be flushed only with extreme difficulty."

Mr. B. T. Gault, of Glen Ellyn, Ill., found this bird not uncommon in the grassy marshes near Sheffield, Ind., and describes the song as altogether different from that of *T. palustris*. "In the manner of delivery it forcibly reminds one of the song of the Dickcissel (*Spiza americana*) although, of course, it was not near as loud. They were quite shy but would allow one to approach within forty or fifty feet of them, when they would dart down into the thick grass, from which it was almost impossible to dislodge them. The specimens that I secured were shot from small bushes on the edge of the marsh, these being the favorite stands occupied by the male in song."

According to Dr. Brewer, the nests of this species are constructed in the midst of tussocks of coarse, high grass, the tops of the blades being bent down and interwoven into a stout spherical ball, closed on every side save for one small aperture. The strong wiry grass of the tussock is also shot through and interlaced with finer materials brought in by the bird. The whole structure is almost impervious to rain; and the inner nest is composed of grasses and fine sedges, lined with vegetable downs.

The Cardinal

By Elizabeth E. Elliott

Catbirds we love with their mocking note,

Albatross, breasting the stormy sea.

Robin Redbreast, bold, with his crimson throat,

Doves, that nest in the southern pine tree.

Indigo Bird of Heavenly hue,

Nighthawks, whose humming we plainly hear,

Acad'an Flycatcher of yellowish hue,

Linnet and Lark we alway hold dear.

But of all our birds of feathered fame,

The Cardinal, brave in coat of flame.

Most holds our hearts in Love's enthrall.

From earl'est spring to latest fall.

Our Grosbeaks and Their Value to Agriculture

By W. L. McKee

Seven kinds of finches, commonly known as grosbeaks, summer within our boundaries. The majority of these are good friends of the farmer and deserve to be widely known in order that their services may be appreciated. The grosbeaks are easily distinguished from other finches by their stout form, bright plumage, massive bills, and melodious voices. Two of them live mainly in cold or mountainous areas, and, having little to do with farms or with the insects that prey on crops, may be dismissed without further notice. The other five live largely in agricultural regions and secure most of their food about cultivated lands. All of them feed to some extent upon crops, but only one does appreciable harm. On the other hand, all perform invaluable service in destroying certain of our worst insect pests. It is the purpose of this bulletin to make known the exact nature of the services rendered by grosbeaks, to suggest means of reducing or preventing such damage as they do, and to propose methods of protecting them.

The rosebreast has an extensive range, breeding from Kansas and the mountains of Tennessee north to Newfoundland and the Great Slave Lake region. It eats some green peas, and is charged with injuring orchards, both by budding and by eating the fruit. Our investigations lend no support to the latter accusation, and, although the birds eat peas, they invariably consume enough injurious insects to more than offset the damage.

The rosebreast has long been held in high esteem because of its habit of preying upon the Colorado potato beetle, and the name potato-bug bird suggests its important services in this direction. Larvæ, as well as adult beetles, are consumed, and a great many are fed to nestlings. No less than a tenth of the total food of the rosebreasts examined consists of potato beetles—evidence that the bird is one of the most important enemies of the pest. Its services in devouring other exceedingly harmful insects are scarcely less valuable. It vigorously attacks cucumber beetles and many of the scale insects. It proved an active enemy of the Rocky Mountain locust during that insect's ruinous invasions, and among the other pests it consumes are the spring and fall cankerworms, orchard and forest tent caterpillars, tussock, gipsy, and brown-tail moths, plum curculio, army worm, and chinch bug. In fact, not one of our birds has a better record. The rosebreast attacks the worst enemies of agriculture, making them its favorite prey, and time after time it has rendered valuable aid in checking their destructive infestations.

Cardinals range from southern Mexico, Lower California, and Arizona, north to Iowa and Ontario, and east to the Atlantic coast. They are permanent residents, spending the summer and winter in the same locality. It has been

claimed that they pull sprouting grain, but no evidence of damage to either grain or other crops is afforded by the examination of more than 500 stomachs. On the other hand, the evidence is ample that they do much good. The redbird is known to feed on the Rocky Mountain locust, periodical cicada, and Colorado potato beetle. It is a great enemy also to the rose chafer, cotton worm, plum or cherry scale, and other scale insects, and attacks many other important insect pests, including the zebra caterpillar of the cabbage, the cucumber beetles, billbugs, locust flea-beetle, corn-ear worm, cotton cutworm, southern figeater, codling moth, and boll weevil. In addition, it consumes a great many seeds of injurious weeds. Thus its food habits entitle the bird to our esteem, as its brilliant coat and spirited song compel our admiration.

The black-headed grosbeak ranges from southern Mexico to British Columbia, North Dakota, and Nebraska. It fills the same place in the West that the rosebreast does in the East, and economically is fully as important. In parts of its range it is destructive to early fruit and attacks also green peas and beans. However, since by proper precautions such losses may be minimized or altogether prevented, they should not be given too much weight in estimating the value of the bird. Instead of being regarded as an enemy by western orchardists, the blackhead should be esteemed as a friend, since it is a foe to the worst pests of horticulture—the scale insects—which compose a fourth of its food. The black olive scale alone constitutes a fifth of the bird's subsistence, and the frosted scale and apricot scale, or European fruit *Lecanium*, also are destroyed. In May considerable numbers of cankerworms and codling moths are eaten, and almost a sixth of the bird's seasonal food consists of flower beetles, which do incalculable damage to cultivated flowers and to ripe fruit. For each quart of fruit consumed by the black-headed grosbeak it destroys in actual bulk more than one and a half quarts of black olive scales, one quart of flower beetles, besides a generous quantity of codling moth pupæ and cankerworms. So effectively does it fight these pests that the necessity for its preservation is obvious, while most of its injury to fruit is preventable.

This small but beautiful bird, breeds over the southern two-thirds of the United States. It is rather rare in the northeastern part of this range, but is common locally in the southern and western parts. Blue grosbeaks do no damage during the nesting period, and, in fact, are of great value to any farm they choose for a home, since they eat large numbers of injurious insects and feed their young exclusively upon them. In certain localities, however, after the breeding season, blue grosbeaks collect in flocks, move into grainfields, particularly those of oats and rice, and sometimes do considerable harm. Despite such depredations, the loss of cereals is repaid many fold, since the birds consume almost five times as much insect food as grain. Moreover some of the insects they devour are especially destructive, such as weevils. More than a fourth of the seasonal food is composed of grasshoppers, including the lesser migratory locust. A tenth of the subsistence is made up of purslane caterpillars and cotton cutworms, enemies of

sugar beets and cotton. Because of its effective warfare on these pests, the blue grosbeak is an efficient ally of the farmer and deserves to be protected.

This handsome grosbeak enters the United States only in Texas, Arizona, and New Mexico, and comes in contact with cultivated crops less than the four related species. Like the blue grosbeak it is more fond of caterpillars and grasshoppers than of other insects. Weevils are next in order of preference. The parrotbill ranges over much of the cotton belt of Texas and feeds upon two important cotton pests, one of which—the boll weevil—is one of our most destructive insects. Cotton worms also are highly relished, as many as 18 having been found in a single stomach. In August and September seven-tenths of the gray grosbeak's food is weed seed, five-tenths consisting exclusively of the seeds of two of the most important weeds of the South, namely, foxtail and bur grass. So far as known, the gray grosbeak eats practically no beneficial insect and damages no crop. This, in addition to the fact that it feeds upon noxious weed and insect pests, entitles it to complete protection.

Three of the grosbeaks, the rose-breasted, black-headed, and the cardinal, are charged with pulling more or less seed grain. This fault, however, is not very serious, since it is well known that repellent mixtures applied to grain before sowing protect it completely. Although the fact is not so well known, grain so treated can be sown by machine, provided the following directions are observed:

"Put one-fourth to one-half bushel of corn [or other grain] in a half-barrel tub; pour on a pailful of hot water or as much as is necessary to well cover the corn; dip a stick in gas tar and stir this briskly in the corn; repeat until the corn is entirely black; pour off onto burlap (bran sacks are excellent); spread in the sun and stir two or three times during the day. If this work is done in the morning and the day is sunny, the corn will be ready for the planter the next day without other care. The hot water softens the tar, so that only just enough will adhere to the corn, and the corn is completely glazed by the sun."

Ethan Brooks, who recommends this method, considers it by far the quickest way of tarring corn, and states that for years he has planted with a machine corn treated in this way.

In cases where grosbeaks or other small birds are the only ones that injure seed grain, it is probable that the above precaution may be safely omitted. Drilled grain, especially if planted by a machine which packs soil over the seed, is safe from their attacks. If the birds simply nip off the leaf, no particular harm is done. Indeed in some cases the crop is benefited by the stooling this process stimulates.

Standing grain may be insured against the attacks of small birds by planting a few rows of millet on the edges of the field. Millet is a prime favorite with all grain-eating birds and should be sown so as to ripen at the time the grain is exposed to damage.

Grosbeaks sometimes steal corn from cribs, but the remedy is obvious. A

lining of small-meshed wire netting, besides protecting the contents of the crib from birds, does greater service by keeping out mice and rats.

The rose-breasted and black-headed grosbeaks eat peas, and the latter eats green beans also. Experience shows that a scarecrow suffices to ward off the rosebreast, but the blackhead appears less easily intimidated. In localities where the birds are abundant bird netting used as a cover is effective and is advised for small patches.

Only one grosbeak, the black-headed, does noteworthy damage to fruit. Where the trees are few, the use of bird netting is recommended. This method was devised and used successfully by Prof. J. Troop, of the Indiana Experiment Station, to protect cherries. The netting cost 4 cents per square yard, and 75 yards were required to cover trees 10 feet high. The expense of the netting, which is good for 10 years, was defrayed from the sale of the first season's fruit. This method is undoubtedly of great value for a small number of trees. In large orchards the best plan is to plant among the fruit trees or on the edges of the orchard a number of wild fruit trees as decoys. The best for the purpose are elder (especially in the West), mulberry, juneberry or serviceberry, and wild or seedling cherries. The Biological Survey is prepared to make specific recommendations for planting trees to protect fruit in any part of the country.

Planting wild fruit is important for the purpose of attracting birds. Besides the fruits above mentioned, the following are valuable: Dogwoods, hollies, juniper, bayberry, Virginia creeper, blueberries, blackberries, and wild grapes. Not all the thickets on a farm should be removed, since they serve to harbor birds, to protect them from enemies, and to furnish nesting sites. Where thickets are lacking, the growth of artificial ones should be encouraged, for they are very attractive to grosbeaks, particularly to the cardinal.

A permanent drinking and bathing place on the farm and in the garden is to be numbered among the most potent attractions for birds, and with a little ingenuity one can be prepared in almost any locality. Winter feeding serves to attract the cardinal, which relishes corn, sunflower, and other seed, and takes kindly even to table scraps. If particular premises prove congenial as a winter home, the bird is likely to prefer them in summer.

No efforts to attract grosbeaks will succeed, however, unless protection is assured. Grosbreaks are already protected by law in practically every State, but, since the machinery for the enforcement of the laws is often ineffective, statutory protection must be supplemented by individual action, particularly under trespass laws. Such action has long been taken in behalf of game birds, and the wise landholder will take equal precautions to preserve the smaller insectivorous species which he is so fortunate as to have as tenants. Shooting and nest robbing must, of course, be barred. Squirrels, when allowed to become too numerous, destroy many eggs and young. But in the settled districts the worst enemy of birds is the prowling cat. In certain islands, cats have completely exterminated

many birds, including almost every kind nesting on or near the ground, and everywhere they levy a heavy toll upon small insectivorous species. Unquestionably, if the number of birds is to be materially increased, measures must be taken to dispose of roving cats. Grosbeaks are usually able to defend themselves and their nests against the English sparrow, but for the sake of other small birds the numbers of this foreign pest should be materially reduced.

Present investigations prove that the services of grosbeaks in destroying insect pests are invaluable. Each kind pays special attention to certain pests which if unchecked would cause enormous losses. Few of our birds are to be credited with more good and with fewer evil deeds than the grosbeaks, and none more clearly deserve protection by the practical farmer.

The Horned Grebe (*Colymbur auritus*)

By W. Leon Dawson

Length: 12½ to 15 inches.

Range: Northern hemisphere; breeds from northern United States northward.

Description.—*Adult in nuptial plumage*: Forehead and crown, with throat and sides of head around on nape, sooty black, deepening and becoming glossy posteriorly; area included by these patches (lores and sides of crown) buffy ochraceous, changing to rufous on lores and the short dense occipital crest; neck in front and on sides and fore-breast rich cinnamon-rufous, shading on breast into the satiny white of belly; sides (well up under wing), and flank patches tinged with rufous and overlaid with some dusky; upper parts grayish black, becoming grayish brown on wings and varied by some edging of lighter grayish brown; primaries clear light brown; secondaries mostly white, forming a quasi speculum; bill black with yellow on lower mandible and tip; feet dusky externally, internally mostly yellow. *Adult in winter and immature*: No rufous anywhere; above uniform grayish black; below, including sides of head, pure white, sometimes tinged on neck and fore-breast with ashy brown; sparingly dusky-shaded on sides; bill with less black.

Recognition Marks.—Teal size; breeding plumage with black and red on head (especially red lores) distinctive for size; slender bill; the pure white of throat and sides of head contrasting with blackish above affords the best field mark in winter.

Nest, of half-submerged or floating vegetation, usually anchored to reeds growing in swamp water. *Eggs*, 2-7, elongated oval, pale bluish white, but usually more or less discolored by nest. Av. size, 1.75 x 1.18 (44.5 x 30).

It is the sixth day of October. Six dainty Grebes are dancing before me on the gently ruffled surface of the water-works pond. I am within thirty



AMERICAN EARED GREBE.
(*Colymbus nigricollis californicus*).
 $\frac{1}{2}$ Life-size.

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feet of them and in plain sight, although my line of approach was concealed by the sloping parapet. The one desire of the visitors seems to be to sleep. They probably dropped down just before sunrise to rest after the long night passage from the Georgian Bay. In sleeping they draw the head back and settle it between the shoulders, thrusting the bill down precisely to the right. Now and then one lifts its head and describes a wary circle of reconnaissance, but is soon reassured and resumes its slumbers. While taking these cat naps in my presence they swim and whirl automatically and maintain their general position, as though gifted with a double consciousness. There are five males in company with one female, and the white of their breasts and throats glistens purely in the morning sun. The bills are so small and slender that there is no possible danger at this range of confusing them with the commoner Pied-billed Grebe.

At some distance and in the confusion of waving grass or tossing billow, a grebe may at times be mistaken for a duck, but the leaping dive which usually follows discovery or close approach, serves to distinguish it from most ducks. The way of the bird in the air, too, is quite unducklike, since it thrusts its feet out behind at different angles, and moves with the directness of a flying projectile. Upon land the Grebe is almost helpless, and only flounders about awkwardly and pitches forward upon its head.

Concerning the breeding of the Horned Grebe in the state, we have no account except that left us by Dr. Langdon in 1880. During a stay of a week in the Port Clinton marshes, the doctor saw no birds; but he came upon two sets of eggs of two each, which seemed referable, by elimination, to this species. He says: "These eggs are chalky-white with a faint, though definite, tinge of pale bluish-green, much like the tint of the Least Bittern's egg, and very unlike the pale whitey-brown of the eggs of *P. podiceps* observed by us. * * That our sets were probably full is indicated by the fact that one of them contained fully developed young, which *swam and even attempted to dive*, on being placed in the water after removal from the egg. The nests were similar to those of *P. podiceps* described below, and the eggs were covered in like manner by decaying vegetation during the day and left for the sun to incubate.

"The young removed from the eggs presented slight but constant differences in the head and neck markings, and the size of the bill as compared with the young of *P. podiceps*, obtained in the same manner—those supposed to be *P. cornutus* being smaller, with more slender bills, less blotching about the head and neck and none in the median line of the throat."

Name on color plate should be Horned Grebe.—A. W. M.

The Cedar Waxwing (*Bombycilla cedrorum*)

By Edward Howard Forbush

Length: $6\frac{1}{2}$ to $7\frac{1}{2}$ inches.

Range: North America at large, from the Fur Countries southward. In winter from the northern border of United States south to the West Indies and Costa Rico.

Among my earliest memories of bird life is one that stands out clearly to this day. A Cedar Waxwing had built her nest on the low branch of an old apple tree at the edge of the orchard, and when I, a little eight-year-old boy, came and peered in, there she sat in fear and trembling, her crest flattened, her exquisite plumage drawn close to her body, and her eyes wild with fear; but she would not desert her charge, because the little ones beneath her tender breast were just breaking the shell. There was something fascinating about her lowered, flattened, almost serpentine head, with its black frontlet and the black bands enclosing her bright, startled eyes, as she snuggled down into her warm, leaf-sheltered nest. Alert and ready for instant flight, she held her place. It was my first glimpse of the home-life of a wild bird.

Next year was a canker-worm year, and all through the orchard the little geometrids began to cut holes in the young leaves. Then came the Waxwings in flocks, and there they stayed, often whispering to one another and always catching worms. Such gourmandizers as they were! They ate until they could eat no more, only to sit about on the branches or play with one another awhile, and then eat again. The canker-worms stripped a few of the old trees, but the Waxwings cleared most of them and saved the leaves; so we did not lose our apples. When the cherries were ripe, these birds always found them. They stayed in the cherry trees with the same persistence that they showed in their work with the canker-worms. They have a habit, when satiated, of sitting together, sometimes five or six on the same limb, and at such a time I have seen a cherry or a caterpillar passed from one to another until it had passed up and down the line before any would take it.

Who can describe the marvelous beauty and elegance of this bird? What other is dressed in a robe of such delicate and silky texture? Those shades of blending beauty, velvety black, brightening into fawn, melting browns, shifting saffrons, quaker drabs, pale blue and slate with trimmings of white and golden yellow, and the little red appendages upon the wing not found in any other family of birds—all, combined with its graceful form, give the bird an appearance of elegance and distinction peculiarly its own. Its mobile, erectile crest expresses every emotion. When lying loose and low upon the head, it signifies ease and comfort. Excitement or surprise erect it at once, and in fear it is pressed flat.

In 1908, some fruit-growers in Vermont introduced into the assembly a bill framed to allow them to shoot Cedar Waxwings. This bill was pushed with



such vigor that it passed the House in spite of all the arguments that could be advanced regarding the usefulness of the birds. In the Senate, however, these arguments were dropped, and the senators were shown mounted specimens of the bird. That was enough; its beauty conquered and the bill was defeated.

The Cedar Waxwing is found throughout the wooded portions of North America, from the fur countries southward, and winters in most of the United States and southward to Cuba, Mexico and Panama. It is accidental in the Bahamas, Bermuda, Jamaica and Great Britain. It breeds from British Columbia to northern Ontario and northwestern Quebec and south to southern Oregon and North Carolina.

Perhaps in the white days of winter you may see a little flock sitting upright upon some leafless tree, calling softly to each other in their high-pitched, lisping, sibilant monotone. As Mr. Dawson says: "It is as though you had come upon a company of the Immortals, high-removed, conversing of matters too recondite for human ken, and who survey you the while with Olympian disdain."

During the nesting-season they become silent indeed, but several competent ornithologists have heard a low song. Judging from my own experience, however, this song must be about as rare as that of the dying Swan—which, by the way, is not a myth. Mr. Brewster has heard our Waxwing give a succession of loud, full notes, not unlike those uttered by Tree Swallows in spring. On several occasions they have been given by a bird circling high in air, as if in song flight, but he has heard similar cries uttered by wounded birds of this species, and suspects that these calls are merely a succession of alarm notes.

The Cedar Waxwing breeds very late, raising its young in July or August, when wild cherries and blueberries furnish them an abundant supply of food. In New England, the earliest nests sometimes have eggs by the second week in June. The breeding-season is at its height by the last of July. Sometimes a pair raises two broods, and a few have young in the nest in September. The nesting-site varies greatly. The nest is often located on some tree from which the waxwing gets its food, although I have never seen its nest in a cherry tree. The apple is commonly chosen, also the Virginia juniper or red cedar. Sometimes, in settled regions, the nest is placed on a low limb or a hedge not more than five or six feet from the ground, sometimes in tall elms or maples, more rarely in the top of a birch or some pasture tree. Both male and female engage in nest-building; the male often brings nesting-material, while the female fashions it into shape. In the forested regions of the North, the nests are found in spruce or hackmatack trees in open swamps. The nest varies as much in material and construction as in situation. In the South it is comparatively small and compact, built mainly of small twigs, grass culms, weed-stalks and leaves, and lined with fine grasses and grass roots. In the farming regions of the North the nest is often a bulky structure, composed largely of the stems of weeds and grasses, a few twigs, grape-vine, cedar or hemlock bark, and feathers, hair or wool; sometimes including rags, string, lint, paper or yarn in its construction.

The eggs number three to five, pale bluish, or bluish gray, with more or less of a purple tint, tapering rather suddenly toward the small end, and marked with small distinct roundish spots of blackish or umber. The large end is marked with various touches and shades of purple. An egg is laid daily until the set is complete. The male and the female are said to take turns in incubating, and in feeding the young, which hatch after about fourteen days' incubation.

The migrations and winter movements of the Cedar Waxwing are controlled largely by the supply of certain wild berries in the regions over which they pass. Therefore they may be met with in fall and winter anywhere from the latitude of Maine to that of Georgia, wherever the berries upon which they feed are plentiful. In spring, however, there seems to be a rather irregular double migration northward. Mr. Wayne states that they appear in South Carolina in February, and again in the last few days of March. In eastern Massachusetts, a flight comes usually in February and another in May, after which the bird is distributed over New England. The significance of these flights has never been fully explained, but in Massachusetts the earlier flight is supposed to be composed of birds that go far north to breed. When moving long distances, the Cedar Waxwing flies high, but ordinarily it passes just above the tree-tops.

The food of the Cedar Waxwing consists very largely of fruit; but most of it is wild fruit and of no value to man.

The Biological Survey finds that 87 per cent of its food for the year is vegetable matter. Wild fruits and seeds compose 74 per cent of this and cultivated cherries only 5 per cent. The animal food consists mainly of insects. When the Waxwings come in spring, they may be seen pecking at the blossoms of fruit trees and scattering the petals broadcast; but when their stomachs have been examined quantities of the insects that infest the blossoms have been found. They are fond of leaf-eating beetles, and devour quantities of the Colorado potato beetle and the pernicious elm-leaf beetle, which has proved so destructive to elms recently in the eastern states. Mr. Outram Bangs informed me that the Waxwings entirely cleared his young elms of this pest. Mrs. Mary Treat notes a similar instance. This bird is very fond of the small geometrid caterpillars which strip the foliage from apple trees, elms and other trees, and it destroys enormous quantities of these worms. Professor Forbes estimates that a flock of thirty of these birds will eat 90,000 canker-worms a month—a very moderate estimate, for the appetite of the bird is unlimited. Cedar Waxwings have been known to gorge themselves with early cherries so as to be unable to fly. The young are fed quantities of insects, and, as they grow older, the parents give them fruit. The food is usually regurgitated into the open mouths of the little ones.

In late summer and early fall, the Waxwing imitates a Flycatcher, and, taking its post on some tall tree, usually near a pond or river, launches out over water or meadow in pursuit of flying insects. Birds taken at such times have

been found crammed with insects to the very throat. Grasshoppers, crickets, crane flies, lace-wings, butterflies, moths, bugs, bark-lice and scale-lice all form part of their bill-of-fare, with occasionally a few snails. They seem to do little injury to cultivated fruit except to the cherry crop, and most of this usually may be avoided by planting a goodly number of early mulberry trees when planting cherries. In my own orchard, the mulberries attracted almost all birds away from the cherries. The best varieties of mulberries to plant are the Early Russian, the Charles Downing and the New American.

Like some other plump and well-fed personages, the Cedar Waxwing is good-natured, happy, tender-hearted, affectionate and blessed with a good disposition. It is fond of good company. When the nesting-season is past, each harmonious little family joins with others until the flock may number from thirty to sixty individuals. They fly in close order, and keep well together through the winter and spring until the nesting-season again arrives. Their manner of flight is rarely surpassed. Often they suddenly wheel as if at command and plunge swiftly downward, alighting in a compact band on the top of some leafless tree. They roam over the country like the Passenger Pigeon, never stopping long except where food is abundant. When hunting for caterpillars in the trees, they sometimes climb about like little Parrots. They often show their affectionate disposition by "billing," and by dressing one another's plumage as they sit in a row.

The fly-catching habit of these birds is sometimes exercised even in winter. Mr. Brewster notes that on March 1, 1866, in Watertown, Mass., he saw the members of a large flock engaged in catching snow-flakes. They took their station on the branches of a tall elm from which they launched forth in quick succession and snapped up the whirling flakes. The Waxwing lives a wandering Bohemian life, intent on satisfying its healthy appetite; and, this done, seems to be lost in admiration of the beauties and graces of its relatives and companions.

In August, when all the other birds except the goldfinch and an occasional robin with its second brood have cast out their young to make shift for themselves, the Cedar Waxwing is busy caring for its brood. A little later and the Waxwings have gathered in loose flocks to make quick-winged marches, stopping only long enough here and there to forage liberally on the country.

Some folk call the Waxwing the cherry bird, a name which hurts its general reputation for fair dealing with man. The Waxwing occasionally eats cherries, but the main courses of its breakfast, dinner and supper are the insects which if unchecked in the multiplying of species would make not only cherries alone but all of man's delectable fruits impossible. Therefore, call the Waxwing a Waxwing and let the other name be a thing of the by-gones.

In the suburbs of Chicago the Waxwings are fairly abundant birds. They are nature's most perfectly groomed children. They can turn their backs to the worst prairie storm which blows and never ruffle a feather. They perch upright on a twig like soldiers, shoulders back, heads up, with topknots like helmets of

Mars. It is curious that more people do not know this bird neighbor of ours. It has an appealing beauty and appealing habits, and yet except for the earnest field students it seems to have few intimate human acquaintances.

In the spring occasionally the Waxwing, seemingly in mere playfulness, pulls the petals from the apple blossoms, rolls them in its beak and lets them fall to earth. In the winter during a gentle snowfall, when the big white flakes are floating down, the Waxwings will fly out from their evergreen perches to catch the descending morsels. Perhaps the birds think they are transformed apple blossoms, but whatever they think, they are untiring in the pastime. The Cedar Waxwing is with us in spring, summer, fall and frequently in winter. It is so friendly by nature that almost certainly it must wonder why more humans do not try to scrape acquaintance.

The Savanna Sparrow (*Passerculus sandwichensis savanna*)

By W. Leon Dawson

Length: 5½ inches.

Range: Eastern North America, breeding from northern United States to Labrador and Hudson Bay territory.

Description.—*Adults in spring*: Superciliary line and edge of wing near alula pale yellow (at a distance often not distinguishable from white); a buffy or whitish median crown line separating two broad, blackish stripes; blackish (but poorly defined) maxillary, rictal, and post-ocular stripes—the last two usually meeting behind and enclosing the buffy auriculars; above, in general, brownish black, the feathers having black centers, bordered first by rufous or ochraceous buff, then ashy; below, white or sordid, the belly and crissum unmarked; the chin and throat with tiny, and the breast with large, wedge-shaped spots of brownish-black (sometimes coalescing to form central blotch); sides and flanks heavily streaked with the same. At other seasons and in young birds, the yellow is more pronounced and the general pattern is somewhat obscured by a buffy or ochraceous suffusion.

Recognition Marks.—Warbler size (but much more robust in appearance than a warbler); general streaky appearance; the striation of the head, viewed from before, radiates in twelve alternating black and white (or yellowish) areas.

Nest, on the ground, sunken flush with surface, lined indifferently with grasses. Eggs, 4-6, greenish- or bluish-white, heavily spotted, mottled, or washed with reddish brown or lilac. Av. size, .78 x .56 (19.8 x 14.2).

Dr. Wheaton's statement: "Very common spring and fall migrant in southern and eastern, and probably summer resident in northern Ohio," is somewhat puzzling and perhaps a little irritating to one who, having spent at least parts of eleven seasons in the field, has encountered only three isolated



examples of the species in the state. The doctor probably depended greatly upon some favored haunt near Columbus not now known. I find upon inquiry that most available notebooks of the present day contain only scattering and meager references to this rather rare and irregular migrant. Mr. H. C. Oberholser, in his "Birds of Wayne County" says of it: "A transient visitor; apparently rare, though in proper localities usually to be found in spring. Not observed in the fall. It arrived about the middle of April, the sixteenth of this month being the earliest date recorded."

My two Columbus dates are April 24, 1902, and March 19, 1903, the latter being the earliest of which I have information, a typical example of that wonderful warm wave which amazed the oldest ornithological inhabitants. Prof. A. W. Butler, in his "Birds of Indiana," records it as a rare resident in the lower Wabash Valley and gives a few instances of its breeding in that state. The instance recorded by Dr. Wheaton on the authority of Mr. M. C. Benson of Gambier is the only positive breeding record of this state of which I am aware.

The Savanna Sparrow is found during migrations along the bushy banks of streams, in weedy fields and bottom-land meadows, together with their interrupting fence-rows and hedges. In habits and appearance it most nearly resembles the Vesper Sparrow, but may be instantly distinguished by the conspicuous way in which it "parts its hair." Like the other bird, it pitches suddenly off its perch when disturbed and flies rapidly above the surface of the ground, following every inequality with bewildering precision. Its song is described as a "curious, squeaky affair," as inconspicuous as the bird.

TWO LITTLE BIRDS

By WILLIAM J. ACKER

Two little birds perch in a tree
And chirp their songs of honest glee,
Filling the air with tuneful life
Till e'en the fields with song are rife.
All unawares the warblers sing
While nearer creeps the dreaded thing:
A mass of fur and four strong paws
Where death lurks in the wily claws;
In the baleful eyes a gleam of lust,
And body poised for the murd'rous thrust,
It pauses a moment, then—a spring,
And one falls prey to the treach'rous thing.
The other bird, with a startled cry,
Then flies away to the woods near-by;
And a hunter comes—a sudden flash,
And the bird's breast shows a crimson splash.

Now whose is the greater part of blame?
Whose is the wanton act of shame?
Who is it incurs the censor's ban,
The thoughtless cat or the critic—man?

The King Rail (*Rallus elegans*)

By Lynds Jones

Length: 14 to 17 inches.

Range: Eastern United States, north to the Middle States, northern Illinois, Wisconsin and Kansas.

Synonyms.—Red-breasted Rail; Marsh Hen; Fresh-water Marsh Hen.

Description.—*Adult*: Above brownish black, the feathers broadly striped laterally with lighter browns (wood-brown, bistre and olive-brown), and shading into burnt umber on wing-coverts and edges of quills; forehead with numerous, enlarged, glossy, black shafts without attendant vanes; a light line over eye in front, and a dusky line through eye; lower eye-lid white; chin and upper throat white; lower throat and breast, reaching up well on sides of neck and face, cinnamon-rufous (Mars brown), growing paler medially and posteriorly; belly, flanks and lining of wings brownish dusky or blackish, crossed by narrow, white bars, lighter, or sometimes almost unmarked fulvous, centrally and on thighs; bill dark above, lighter below.

Recognition Marks.—Little Hawk to Crow size; marsh-creeping habits. Large size distinctive among the Rails of the interior.

Nest, of cat-tail leaves and grasses on the ground or in grass-tussock of marsh. *Eggs*, 6-12, dull white or buffy, sparingly spotted and dotted with reddish brown and purplish gray. Av. size, 1.65 x 1.21 (41.9 x 30.8).

Rushes, sedges, arums and waving cat-tail leaves form a curtain of living green which effectually screens the private life of the Rails from the common eye. From behind the curtain issue certain sounds which we attribute to this bird or that, if we are wise, but that is all. Now and then, indeed, some ruthless invader dashes behind the decent folds and sends the Rail-folk scurrying. This, to say the least, is rude, and brings its own punishment—an empty swamp, or maybe a few limp carcasses; but what are they? No; if you would learn Rail ways, you must do as Rails do—pry and spy, lurk and peep, and above all, when the time comes, keep silent. To thread the mazes of the swamp, to know its mysteries, to be on intimate terms with its inhabitants, to speak its language, that is an achievement. But if it is only exercise or "sport" you are wanting, go shoot bloodless pigeons made of clay, on some pleasant hillside.

The most that can be learned about the King Rail in thrashing about a swamp is that it rises suddenly, flies slowly in a straight line just above the tops of the reeds, and plumps down suddenly not far away, as though its wings had given out. It affords an easy mark for the sportsman, being, in fact, about as severe a test of skill as a tomato can floating down stream. The gunner learns, too, that the bird is hard to flush, and that if it has any sort of a show for cover, will run rapidly through the weeds, and skulk, rather than seek safety in flight.

**KING RAIL.**

(*Rallus elegans*.)

$\frac{1}{2}$ Life-size.

The chance explorer is about as likely as is the plodding student to come across a nest built up in the reeds and grasses, either well up in a grass-tussock or just sufficiently elevated to keep a hatful of eggs clear of the water. The eggs, ten or a dozen in number, are like nothing else in the swamp, except those of the Florida Gallinule. From these there is no certain distinction. I have noticed, however, that the reddish brown spotting of the latter is apt to be less angular and the spots more numerous and regular. The nest of the Rail does not boast the inclined approach which characterizes that of the Gallinule or the Coot.

The food of the Marsh Hen consists of insects, slugs, leeches, tadpoles and small crayfish, besides a goodly proportion of seeds from aquatic and palustral plants. The last are obtained not only from the soft bed of ooze upon which they may have fallen, but from the seed-pods themselves, since the bird can climb quite nimbly. Like all birds of this class, the most active hours are spent just after sunset and before sunrise. But in a region where they were in little fear of molestation I have seen them deploy upon an extensive mud-flat in broad daylight and go prodding about in company with migrant Sandpipers for the worms which riddle the ooze with their burrows. At such times, too, I have seen a few standing stock still for a quarter of an hour at a stretch, evidently to catch a wink of sleep along with their sun bath, and trusting, perhaps, to their more vigilant neighbors to give warning of approaching danger.

The King Rail has not been much observed in our state, and although not to be accounted rare, is doubtless much more frequent in the prairie states to the west and northwest of us, where swales and "slews" abound. It has been reported breeding in the neighborhood of Circleville, but is more commonly found in the extensive marshes which vary the Lake Erie shore. Its presence may be detected by its weird call, which is best described in the words of Mr. Frank Chapman, "a loud startling *bup, bup, bup, bup, bup*, uttered with increasing rapidity until the syllables are barely distinguishable, then ending somewhat as it begins—the whole performance lasting about five seconds."

The Gray Cheeked Thrush (*Hylocichla aliciae*)

By W. Leon Dawson

Length: 7 to 8 inches.

Range: Eastern North America, west to the Plains, Alaska and northern Siberia, north to the Arctic Coast, south to Costa Rica. Breeds chiefly north of the United States.

Synonym.—Alice's Thrush.

Description.—*Adult*: Above, uniform dull olive-brown; below, white, on the breast and sides of throat tinged with pinkish buff, and further marked by broad, sector-shaped spots of blackish; the sides and sometimes lower breast washed with dusky gray; lores and region about angle of commissure distinctly gray; remaining space on side of head gray, mingled with olive-brown. Bill dark brown, somewhat lighter below; feet brown.

Recognition Marks.—Sparrow to Chewink size; pallid cheeks afford only positive diagnostic mark; darker above and more heavily marked on breast than *H. fuscescens*.

Nesting.—*Nest*, of bark-strips, leaves, grasses, etc., lined with fine grasses; on branches of low trees or on bushes, two to eight feet from ground. *Eggs*, 4, greenish blue, faintly spotted with reddish or yellowish brown. Av. size, .91 x .70 (23.1 x 17.8).

All Thrushes look alike to the layman, and it is not perhaps to be wondered at that this species, although by no means rare, is not known to above a dozen observers in the state. Alice's Thrush has the same modest ways and semi-terrestrial habits which characterize the other members of the genus, and while with us does little to distinguish itself from them. Like the others, it has a fashion of slipping along quietly through the undergrowth, and may not be observed until driven, all unconsciously perhaps, to its last ditch, whereupon it flutters up into view on a post of the boundary fence, or hurtles back wildly over the observer's head. It is, perhaps, a little more deliberate in movement than the Olive-backed Thrush, with which it is most likely to be confounded.

During the migrations the bird is seldom heard to utter a sound. Its scolding note is described as being midway between the interrogatory whistle of the Olive-backed and the ill-mannered snarl of the Wilson. Its song, too, requires careful distinction from the former, and hence from both.

The breeding habits of the Alice Thrush are as yet imperfectly known, especially in its British American range. Mr. Bradford Torrey first suspected its presence in New England during the breeding season, on the strength of a song heard in the White Mountains, and shortly afterward Mr. William Brewster confirmed the record by securing nests in the same locality.

ALICE'S THRUSH.

(Turdus aliceae.)

About $\frac{2}{3}$ life-size.

Buffle-head (*Charitonetta albeola*)

Range: Breeds from upper Yukon, lower Mackenzie, Great Slave Lake, and central Keewatin south to British Columbia, northern Montana, and central Ontario; winters from Aleutian Islands, British Columbia, Idaho, Colorado, Missouri, southern Michigan, western New York, and New Brunswick south to northern Lower California, central Mexico and Florida.

The common name of this little duck is strikingly suggestive of its appearance, for the head, with its white markings and fluffy feathers, seems too big for the diminutive neck and body. An equally suggestive name in fall, when it becomes very fat, is "butterball." Though by no means strictly confined to fresh water, the buffle-head prefers fresh water, and is more abundant on the larger lakes and ponds of the far West than in eastern waters. Wherever found, east or west, it is extremely friendly, and when the gunner puts out a flock of wooden decoys our little duck immediately responds to the invitation to alight and be sociable. Taking advantage of this amiable weakness—some might call it stupidity—the gunner has already greatly reduced the number of buffle-heads, and left scarcely a tithe of their former thousands. Very few ducks can dive more quickly at need than the buffle-head, and in this respect it almost rivals the little grebe known as the "water-witch" or "hell diver." This skill as a diver is of great service to the duck in its search for food. It is adept at catching small fish and, perhaps, because of this and of other animal food, its flesh is not greatly esteemed.

They Didn't Think

Once there was a robin
Lived outside the door,
Who wanted to go inside
And hop upon the floor.

"Oh, no," said the mother,
"You must stay with me;
Little birds are safest
Sitting in a tree."

"I don't care," said Robin,
And gave his tail a fling.
"I don't think the old folks
Know quite everything."

Down he flew, and Kitty seized him,
Before he'd time to blink.
"Oh," he cried, "I'm sorry,
But I didn't think."

—Phoebe Cary.

From Haunts of Coot and Hern

By Edward B. Clark

When the snow melts in March, and the spring rains beat on the land, the banks of the Kankakee River can no longer hold their burden of waters. The flood rises rapidly and spreads over the outlying meadows and woodlands. In Stark County, Indiana, the broadening river forms a considerable body of water known as English Lake. Summer comes before the flood recedes to leave great pools and morasses in its wake as reminders of its spring-time visit. In June these English Lake reed-grown stretches are "the haunts of coot and hern," of the redwings, the marsh wrens, and the rails. In the earlier spring great flocks of ducks, geese, and plover make a resting and feeding place of the reaches of swamp and open water. There is a world of bird-life throughout the whole English Lake section. Perhaps there better than any other place in the Middle West may be studied the habits of the water birds. A Chicago shooting club owns much of the marsh, and as all hunting is done under rules which have regard for the preservations of species, the birds still throng to the locality with the first touch of spring-time warmth or of autumn chill.

In the third week of May, 1901, four weeks after the shooting season had closed, I tramped and rowed through the English Lake section with Ruthven Deane, the president of the Illinois Audubon Society. It is something to be familiar with many birds; it is something better to know them all. I learned much on that trip, both of birds and of methods of observation. Mr. Deane is closer to Nature's heart than most men, and of him she seems to have made a confidant. We reached the English Lake club-house just at dusk, but all the bird voices were not hushed. While waiting the call to supper we strolled down to the banks of the little flooded inlet which makes a water highway for the rowboats from the house to the river. A vesper sparrow sang to us as we walked through the deepening darkness. From the damp thicket on the further side of the inlet came the voice of the Maryland yellow-throat. He was as insistent in his calling as is the custom with his tribe when once roused to vocal effort, but even the yellow-throat's insistence gave way before the screams and scoldings of a pair of robins. I have heard robins raise disturbances before. They are often the common scolds of a bird neighborhood, but the performance of the pair that we heard that night rather outdid in volume of sound anything of which I had supposed the robin to be capable. It was too dark to investigate the cause of the trouble, and so the matter was put off until sunrise. The robins apparently wished to make it certain that we were impressed with their trouble, if trouble it were, for the last thing that we heard on closing the door of the dining-room behind us was a noise that was nothing less than a screech, and it came from both birds in unison.

Just as the sun touched the treetops the next morning we were out of doors.

The song sparrow was attune, an orchard oriole piped to us from a maple at the doorstep, and a brown thrasher was singing somewhere in the wet thicket beyond the boat-houses. The robins were silent. I went directly to the scene of the disturbance of the night before, and soon found Master Robin perched on a fence post with a big, fat worm in his mouth. It is barely possible that he had worn his voice out the night before, or more likely, he was afraid he would drop the worm, else he would have scolded me and perhaps sworn a little. I fully expected to find nothing less than a rifled robin household. The duet of the night before could hardly be accounted for on less tragic grounds. I soon discovered, however, that neither black-snake nor small boy robber had been about, for the robin, after looking me over for a minute, flew to a crotch low down in a maple across the inlet, and dividing his worm prize into bits, fed some concealed young. I went to the tree and climbing a few feet looked into the nest. There were four naked young ones within. They were certainly not more than eight or ten hours old. It is my firm conviction that the racket that the father and mother birds made the night before was their method of rejoicing that unto them several children were born.

The bird-lover's best time abroad is usually before breakfast. We walked that morning along the edge of the swamp and listened to the "fluting" of the redwings. In a little clump of trees, whose foliage was nearly full, we found the redstarts and the yellow warblers. There were other warblers in their company, but they gave us only a fleeting glimpse, and though we followed through the tangled thickets as they went from tree to tree, we had to give them up in despair. Warbler time is the time to try the bird-lover's soul. The elusive creatures invariably give the observer a crook in the back, and not infrequently give him a crook in the temper. A pair of doves flew by. We had heard their notes ever since we had left the house. There is something more than mournful in the dove's note. To me there is something that the children call "creepy" in the sound. Doves are abundant throughout the Middle Western country, but how long they will continue so is a question. Our wise legislators in many states have been putting these birds on the game list so that they may be shot and turned over to the cook. Before long the wise ones will be planning an open season for humming-birds and kinglets.

The doves were out of sight, but hardly out of mind, when my companion caught sight of a male bluebird sitting on a stump about forty yards away. The stump had holes in it, any one of which looked like an ideal place for a bluebird's nest. Presently the female bluebird appeared. She took a perch by the side of her husband. "In truth," we said, "the birds have a nest in the stump." Then we looked at them through our glasses and became more firmly convinced than ever that the nest was just below them, for the glass revealed the fact that Mrs. Bluebird had a fat grub in her bill. Soon, however, she left her perch and flew to a tree about twenty yards to our left. We said to ourselves, "Mrs. Bluebird saw us looking at the stump and so she has left it for another place in order to

distract attention from her home." Then it was that Father Bluebird also quitted the stump and took a station near his spouse. Both birds were restless and apparently anxious. They moved to another tree only a few feet distant, evidently trying to make us forget all about the stump and the little homestead that it held.

We were standing close to a small birch tree. My left hand was against its trunk while with my right I was using the field-glass. I took my eyes off the bluebirds a moment and saw that there was a hole in the birch-tree trunk within an inch of my thumb. I called my companion's attention to it. He laughed, and walking over, looked into the cavity. There, snuggling down into their straw-lined nest, were four young bluebirds almost fully fledged and apparently about ready for their first flight in life. When Mr. and Mrs. Bluebird saw that their home was discovered, their trouble was great. The madame dropped the choice morsel intended for her young and called plaintively. We had no intention of harrying that birch-tree home. We backed away from it as quietly and as quickly as we could, and in a few minutes had the satisfaction of seeing Mrs. Bluebird pay her family a visit. If she had not recovered the grub which she had intended as a bit of breakfast for her offspring, she had found another exceeding quick, for we saw her feed the babes before the bushes shut off our view of the hole in the birch.

On our way back to breakfast we passed a pigsty. It was just like all other pigstyes in the round world. There was plenty of wallowing room and plenty of mud for the porkers. The manager of the English Lake club-house had paid a visit to this pen early one morning, and there in the mud, in the very center of the circling pigs, was a cardinal grosbeak, singing his sweet notes to an audience that could do nothing but grunt its approval. Surely this was a literal casting of pearls before swine.

It was still early morning when we took a boat and poled our way down the grass-grown inlet toward the sweeping Kankakee. As we made our way laboriously along the little waterway we flushed a solitary sandpiper that flew away reluctantly from a choice feeding-ground. Glancing back, I saw the bird return to the spot before we were a dozen yards away. A Baltimore oriole flew over our heads, carrying nesting material. I watched the bird to see where it was going to swing its cradle. It took to a treetop perch, however, and made no movement toward its nesting-place until we were well out of sight. It was Sunday, May 19th, and the river was still flowing with nearly even banks. We started down stream letting the current take us almost as it would. We passed a little rift, starting into flight a half-dozen "tip-ups" that circled the prow of our boat and made off up the river, peeping complainingly. We reached a patch of timber with plenty of deadwood still standing, but leaning heavily toward the river. There we landed, for we hoped to find the prothonotary warblers building in the rotting stumps. We found the birds in all the beauty of their orange dress, but if they had decided on homestead sites they kept their secret well.

Walking up the river bank a little way to the edge of the towering timber, we found a man and two boys fishing. They had had no luck. It was too early, they said, and there was still too much water in the river. It was while talking to them that we saw a moving streak in the water. The ripple with its shining trail came nearer and nearer, and in a moment we saw that it was a snake with uplifted head, that was swimming for the bank at our feet. I have never liked snakes well enough to care to scrape acquaintance with them. I have never been able to take well to heart Dr. Abbott's teaching of the beauty and friendliness of the serpent tribe. The snake that was swimming the Kankakee that spring morning was surely four feet long, and it had a certain beauty of coloring that pleased the eye even while the mind loathed. The man of the fishing party said the snake visitor was a blue-racer and that it was "as pizen as a rattler." We doubted the truth of the latter assertion, but in the face of it we could not but admire the cool indifference of one of the small boy fishers, who sat dabbling his bare feet and legs in the water within a few inches of the place where the blue-racer was trying to land. The man made a jab at the snake with his fishing-pole and then struck at it with a club, but the reptile drew its slimy length safely out of sight among the spreading roots of a waterside tree.

Snakes are like misfortunes, they never come singly. We had left the little fishing party only a few yards behind when we came within an ace of stepping on a chocolate-colored snake about three feet in length. It was a hideous-looking reptile. It was blunter and fatter at the head and about the body than any snake I had ever encountered in my rambles. From the plump part it tapered off rapidly to a sharp-pointed tail. When Nature painted this creature she added a little dark ginger-root to the colors with which she had striped the hideous gila monster, and then had laid the pigment on thick. Neither of us waterside travelers that morning could give the snake a name, and though I have searched diligently since, I have been unable to find in the books anything that looked like it.

It is not a very far cry from the snake to one species of bird. The cow-bird is regarded by its feathered fellows in much the same light as human beings regard serpents. We hardly had banished the chocolate-colored crawler from our minds when we came across a cow-bird sneaking—there is no other word for it—its way down through the branches of a willow. It took only a moment to show the bird's object. A newly completed yellow warbler's nest, a perfect gem of bird architecture, was fastened in the crotch of some slender twigs of the willow, not more than four feet from the ground. The cow-bird was about to deposit an egg in the little down structure and to trust to the goodness of heart of the warbler to act as foster-mother. I threw a club at the cow-bird and frightened it away. About ten minutes afterwards I went to the willow tree once more, and there was the parasite again acting in the same sneaking way that it had at first. I frightened it away once more, but rebuffs of that kind count nothing with this bird. I haven't the faintest doubt that a visit to the vicinity

of the warbler's nest later in the season would have shown two little gold-lued birds trying their best to keep well filled the maw of a young cow-bird whose bulk was greater than that of both foster-parents combined. The yellow warbler apparently knows that the cow-bird's egg has no right in its nest. At times the warbler will desert its home after the depositing of the alien egg. More often, however, the patient little creature will hatch out the egg that has been foisted upon it and will feed and tend the young cow-bird to the sacrifice of its own offspring.

On the river bank not far from the home of the yellow warbler we found the half-completed nest of a pair of redstarts. We first saw the female with a bit of downy stuff in her bill. She paid little heed to us and by watching her movements we soon discovered her secret. The nest was a dainty little structure placed about fifteen feet from the ground, close to the trunk of a small tree, where it was held firmly in place by two slender, upward-growing twigs. I have spoken elsewhere of the abundance of the redstarts in the Kankakee Valley. Both at Kouts and at English Lake I found them to be by far the most abundant birds of the warbler family. No one need regret their abundance, for they are useful in their lives and of a surpassing beauty of plumage.

When we had taken to our boat again and had drifted a mile with the current of the stream, we turned to the shore once more and drew our little craft up on a muddy bank that separated the river from a great insweeping marsh, guarded on all sides by big native trees. We left the boat and plowed our way into the swamp. We caught a fleeting glimpse of a Louisiana water-thrush as we left the river bank; a catbird gave one strain of his melody that ended in a sharp "meon" as he discovered us. Two or three elusive sparrows dodged in and out of the thicket at the edge of the marsh. The endeavor to identify a sparrow under such circumstances is one of the trying things of life. I soon gave over all thought of the sparrows, however, for my companion, knowing every bird-haunt of this bird-favored country, was leading me straight to a feeding-ground of the great blue herons. The swamp broadened out, the timber giving way to the right and left. Suddenly from the rank grass growth not more than thirty yards ahead of us there rose a great bird that flapped its huge wings, stretched out its great neck, and trailing its lanky legs behind, made straight for the skyline at the treetops. Only a few yards beyond another heron, surprised at its breakfast table, left the well-furnished board reluctantly. One after another the herons rose before our advancing footsteps. I felt a little conscience stricken at having interrupted their feasting. We retraced our steps soon and before we reached our boats the herons doubtless were back at their repast of frogs, slugs, and delicate small fry, with which the marshes of the Kankakee River abound. I never before had seen a wild great blue heron at such short range. In first taking flight the bird is an awkward creature. It reminded me of nothing so much as of a man who is in a hurry to catch a car, but has to stop to gather up four or five bundles before starting to run. The heron's bundles are its long

neck, head and beak, and its two lanky legs. It seems to lose a minute's time trying to dispose of the impedimenta properly before it spreads its wings for the start.

We left the entrance to the heron's retreat and pulled our way up the river. Going against the current of the Kankakee means the mingling of some work with the day's play. The journey of ten minutes going down is a journey of twenty minutes going up. There are, however, plenty of bird excuses for stopping to rest. A small heron pitched on to an island in midstream, fully a hundred yards ahead of our boat. The island was grass-grown, but we succeeded in marking the spot of the bird's disappearance fairly accurately. We made up our minds that we would try to see how close we could approach before this wary bird of the bog should take flight. We kept in the open water until we reached a place abreast of where the heron had disappeared, then turning the prow of our boat toward the island, a few lusty strokes sent us ashore. The bird had gone into the grass not ten yards from the water. We searched the spot thoroughly with our glasses but saw nothing. I was about to jump out of the boat for the purpose of flushing the heron when my wiser friend told me if I jumped off into the mud I could never get out again. I was incredulous, but after I had poked an oar down into the black oozy stuff without meeting with the slightest resistance I concluded to stay in the boat. I had hardly pulled the oar out of the mud before the heron rose and made off for a tree top. It was a little green heron, called in many country sections "fly-up-the-creek." It is probable that had not the protective coloring of the bird been so perfect we could have readily picked it out from its surroundings as it stood in the lush grasses of the island. When the heron reached the tree toward which it flew, it took perch on a dead limb and there silhouetted against the sky made a perfect picture.

We left the green heron staring at the sky and once more pulled hard against the stream. Our destination now was English Lake proper, which opens out to the right and left of the railroad bridge. Beneath this structure the contracted Kankakee sweeps swiftly. By the time of the year of our visit, well into the month of May, the lake was a lake in name only, though the land in many places was still under water. About half a mile above the bridge we saw ahead of us on the open water a great flock of ducks. Our glasses told us beyond much doubt that the birds were blue-bills, more scientifically known, perhaps, as scaup ducks. We pulled directly toward the flock. What follows shows how quickly wild birds gain confidence after the shooting season closes. We reached a point well within gunshot of the blue-bills before they paid any attention to us. We had no advantage of cover whatsoever. A month before these same birds would have been up and off while the boat even to their keen vision had been but a black dot upon the water. We drew closer. One of the ducks rose and in another instant the whole air was awir with their wings. I was kneeling on the forward seat of the boat looking ahead through my glasses at the blue-bills. Suddenly I heard the squawk of a duck within four feet of me. I turned in

amazement and found that the duck's cry, so true to nature, was coming from between the lips of my companion. He was calling the blue-bills. The birds heard that counterfeit call, and deceived completely, circled and swept by within a few yards of our boat. Wary as the birds are, when once fooled they are fooled utterly, and too often to their sorrow in the shooting season.

On a mud bank beyond the reach of water where the blue-bills had been paddling we saw some birds flying and moving about on the ground by turns. We succeeded in getting close enough to say good morning to them all. They were plover, known by the somewhat inelegant name of lesser yellow-legs. These birds, much sought after by sportsmen, seemed like the blue-bills to know that the shooting season was over, and that on this game preserve at least no one was to harm them. Near the yellow-legs we found solitary, spotted, and red-backed sand-pipers, and the ring-necked plover. The birds were all as tame as chickens. We went ashore at a place where there seemed to be some certainty of a firm foundation for our footsteps and started on a hunt for marsh-wrens. We found none, but we flushed a few jacksnipe and took it for granted from the fact of their late tarrying that they were to nest in the English Lake country.

The snipe, the plover, the sandpipers, in fact all the shore birds and the deep-water birds with them, form one of the most interesting groups for the purposes of study. The birds are too little known to the student who is not likewise a sportsman. Most of them are with us only during the shooting season, when approach is difficult. Then again, the very nature of their haunts presents an obstacle to familiar knowledge. It is hard work to scrape acquaintance with them. Their friendship, if it is to be won, must be had at the expense of much mud, some wading and not a few duckings.

Tree Swallow (*Iridoprocne bicolor*)

Length, about 6 inches. The steel blue upper parts and pure white under parts are distinguishing characteristics.

Range: Breeds from northwestern Alaska and northern Canada south to southern California, Colorado, Kansas, Missouri and Virginia; winters in central California, southern Texas and Gulf states and south to Guatemala.

In its primitive state the tree swallow used to nest in hollow trees, and in some parts of the country it still continues to do so. Early in the settlement of the country it saw the advantage of putting itself under man's protection, and now no bird is quicker to respond to an invitation to nest in a box dedicated to its use. The bird lover within the range of the species may secure an interesting tenant or two by the expenditure of a little trouble and labor, since the bird is not a bit fastidious as to its domicile, providing it is weather tight. Tree swallows arrive from the south early in April and soon begin to nest. In the fall they gather in great flocks preparatory to their departure, and may then be seen by

hundreds perched on telegraph wires. As is the habit with swallows generally, tree swallows migrate by day feeding as they go, and a flock passing swiftly south presents to the casual observer an every day appearance well calculated to deceive. Watch the flock as it crosses the road and passes from field to field and you will notice that while the line of flight has many a twist and turn it trends steadily to the south and that no individual takes the back track.

The tree swallow consumes vast numbers of gnats, flying ants, beetles, mosquitoes and other flying insects. It exhibits a rather curious departure from the traditions of its kind in that it appears to be very fond of the berries of the bayberry or wax.myrtle. It also often chooses these bushes for a roosting place at night.

Canvas-Back (*Marila valisineria*)

Range: Breeds from central British Columbia, Fort Yukon, Great Slave Lake, and southwestern Keewatin south to Oregon, northern Nevada, Nebraska, and southern Minnesota; winters from southern British Columbia, Nevada, Colorado, Illinois, Pennsylvania, and western New York south to central Mexico (Jalisco) and the Gulf coast.

The canvas-back, perhaps the most famous of American waterfowl, has purchased its fame at a price. So highly is it prized by the epicure that today he who can afford to dine on canvas-back sets the mark of luxurious living. Not that the canvas-back differs essentially from other ducks, but its exceptional flavor is due to the fact that its favorite food is "wild celery," a long ribbon-like grass which grows in shallow ponds and estuaries. As the plant roots several feet under the surface, only the diving ducks can secure it and the plebeian kinds have to be content with such floating fragments as they can pick up or can steal from their more aristocratic relatives. In Oregon and Washington the canvas-back lives much upon wapato, a bulblake root formerly a staple article of food among many Indian tribes, and their exceptional flavor is said to be little, if any, inferior to that of the celery-fed canvas-back of the East. Elsewhere the flesh of the canvas-back is in nowise superior to that of other ducks, and in some localities on the west coast, indeed, is inedible because of its rank smell and taste. Thus prized alike by the sportsman and by the epicure, the ranks of the canvas-back have been depleted by the relentless pursuit to which it has been subjected. However, the greater number of these ducks breed far to the northward, where they are safe, and under present laws their numbers should increase to something like their former abundance.

The Orange Crowned Warbler (*Vermivora celala*)

By W. L. McAtee

Length: About 5 inches.

Range: Eastern North America, breeding as far north as the Yukon and Mackenzie Rivers and southward through the Rocky Mountains; wintering in the South Atlantic and Gulf States and Mexico. Rare east of the Alleghenies, north of Virginia.

Description.—*Adult*: Above ashy olive-green, clearing and brighter on the rump; crown with patch almost concealed, of orange-red (Saturn red) feathers; wings and tail fuscous with some olive edging; below greenish-yellow, dingy or vaguely streaked with olive on breast and sides. *Immature*: Without orange of crown; more ashy above; duller below; eye-ring whitish.

Recognition Marks.—Small warbler size; orange crown-patch is distinctive, but seldom seen in life; under parts duller and greener than last, not so white as next species; no contrast between general color of head and back.

Nesting.—Does not breed in Ohio. *Nest*, on the ground among clumps or bushes, of coarse strips of bark, grasses and plant-stems, lined with fur and hair. *Eggs*, 4-6, white or creamy-white, finely speckled with reddish brown, and with fainter markings of purplish slate (Kennicott). Av. size, .64 x .46 (16.3 x 11.7).

H. celata is one of the rarer migrant Warblers, of which comparatively little seems to be known. In its breeding haunts, which extend up to well within the Arctic Circle, it is found to be a bird of the undergrowth and open thickets; but during its migration it is at least as likely to be seen in the tree-tops along with the stricter denizens of the woods. A few of us report seeing the species every year or so, and a conscientious shot every fourth year confirms the record.

Dr. Wheaton once came upon a male in full song. He describes the notes as loud, emphatic, and rather monotonous, consisting of the syllables, *chicky-tick, tick, tick, tick*. Professor Lynds Jones renders the song, *chee, chee, chee, chw, chw*, and says that the first three syllables are rapidly uttered and the last two more slowly.

To those people who reside in the temperate regions of the United States it is a very disappointing law of Nature that takes many of our beautiful and sweet tempered little birds into the far North for the purpose of raising their young. As a result of this natural law it is very difficult for students of bird-life to become acquainted with many of the warblers. Their habits and the characteristics of color and voice must be studied during the periods of northern and southern migrations. The study is rendered more difficult, as they remain but a few hours or a few days at the longest, while they are en route. Also, while hurrying along on their journey, they frequent only the foliage of bush



ORANGE-CROWNED WARBLER
(*Helminthophila celata*).
Life-size.

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and tree, where, hidden from the gaze of the observer, they hunt during the day for their insect food. "Absent today, present tomorrow, the warblers come and go under cover of the night, and we may give a lifetime to their study and then know we have not mastered the laws which govern their movements." They are "at once the delight and the despair of field student." Visiting the woods some bright morning in May one may find the trees alive with the busy little warblers. Probably there will be several species; some of them but few in number and rare, while other species will be more numerous in individuals. Here they will spend the day hunting in a happy go-lucky manner, and, though difficult to be seen, they will be betrayed by the simple note which pervades the woods. Dr. Ridgway has said: "No group of birds more deserves the epithet of 'pretty' than the warblers; tanagers are splendid; humming-birds are refulgent; other kinds are brilliant, gaudy or magnificent, but warblers alone are pretty in the proper and full sense of that term."

The Orange-crowned Warbler is one of those warblers which is quite erratic in its appearance in any given locality during its migrations; some seasons it may be common and in other seasons its presence may not be noted at all. It breeds in the interior of British America, in the Rocky Mountain regions and as far northward as the Yukon district of Alaska. In its migrations it passes through the Mississippi Valley, being very rare in those states bordering the Atlantic Ocean north of Virginia. It winters in the South Atlantic and Gulf States and in Mexico, and is a common species in Florida during this season.

This little Warbler is constantly in motion during the daylight hours in the foliage of the higher tree branches. Seemingly to satisfy its tireless energy, it frequently stops its hunt for insects to utter its simple song. Mr. Ernest Thompson, in his "Birds of Manitoba," describes this song as sounding like chip-e, chip-e, chip-e, chip-e, chip-e, and says: "Its song is much like that of the chipping sparrow, but more musical and in a higher key." To Dr. Wheaton its refrain is a "loud, emphatic and rather monotonous song, resembling, as nearly as he can describe, the syllables, chicky-tick-tick-tick-tick; this song was louder and more decidedly emphasized than that of any member of the genus with which he was acquainted." Colonel Goss hears in the song "a few sweet trills uttered in a spirited manner and abruptly ending in a rising scale."

Its nest is usually built on the ground in clumps of bushes and quite hidden by dried leaves. The nest is large for the size of the bird, and is constructed with plant stems, strips of fibrous bark and dry grasses loosely woven together. Not infrequently also leaves are used in the construction of this outer wall. That the little birds may have a soft bed upon which to lie, the nest is well lined with fur and feathers where the

"Blind nestlings, unafraid,

Stretch up wide-mouthed to every shade

By which their downy dream is stirred,

Taking it for the mother bird."

More Birds

A good many people think they observe increased numbers in the flocks of migrating birds. When comparison of this spring's phenomena is made with the necessarily imperfect recollection of what last spring's were like there is a disposition to accept evidence cautiously, but different observations come to the same conclusion and it seems to be supported by facts.

In particular the large number of robins has been noted. In parts of the south the robin is a pet bird. It is fat and plump when it reaches the south and in the plentiful southern food supply it becomes fatter. Sentiment and law protect it in the north, but until congress passed the migratory bird act nothing protected it in the south. The act, although it has been taken to court, evidently has produced a noticeable effect even in song bird life. The effect upon the game birds undoubtedly will be more striking if they can be protected against spring shooting.

People who have been in the south this winter and took the trouble to see what the migratory bird law was doing, found even in districts into which knowledge of a federal enactment would penetrate slowly, it was understood that there was some new sort of a law which had United States authority back of it. The conviction that it was unsafe to go against a federal law and face federal prosecution influenced men who would have shot any bird that could be cooked.

The law is attacked because it keeps duck hunters from their spring shooting. The fact that they are shooting game birds out of existence does not interest them. That can interest another generation. This selfishness is particularly base, but generally it will influence enough people to cause embarrassment to protective legislation.

Where people have been reached by the educational work undertaken by protective organizations there is an increasing appreciation of the value of birds, and it is fairly well demonstrated already that the migratory bird law is increasing the bird numbers.

The Blue Jay

By Susan Hartley Swett

O Blue Jay up in the Maple tree,
Shaking your throat with such bursts of glee,
How did you happen to be so blue?
Did you steal a bit of the lake for your crest,
And fasten blue violets into your vest?
Tell me, I pray you,—tell me true!

Did you dip your wings in azure dye,
When April began to paint the sky,
That was pale with winter's stay?
Or were you hatched from a bluebell bright,
'Neath the warm, gold breast of a sunbeam light,
By the river one blue spring day?

O Blue Jay up in the Maple tree,
A-tossing your saucy head at me,
With ne'er a word for my questioning,
Pray, cease for a moment your "ting a link,"
And hear when I tell you what I think,—
You bonniest bit of spring.

I think when the fairies made the flowers,
To grow in these mossy fields of ours,
Periwinkles and violets rare,
There was left of the spring's own color, blue,
Plenty to fashion a flower whose hue
Would be richer than all and fair.

So, putting their wits together, they
Made one great blossom so bright and gay,
The lily beside it seemed blurred;
And, then, they said, "We will toss it in the air,
So many blue blossoms grow everywhere;
Let this pretty one be a bird!"

The Belted Piping Plover (*Aegialitis meloda*)

By W. Leon Dawson

Description: Similar to Piping Plover, but black band complete on breast and cervix.

Length: $6\frac{1}{2}$ to $7\frac{1}{2}$ inches.

Range: "Mississippi Valley, breeding from northern Illinois, north to Lake Winnipeg; more or less frequent eastward to the Atlantic Coast."

A fortunate discovery made late in the season of 1903 enables us to add this interesting bird to the Ohio state list. On the 26th of June, while Professor James H. Hine was doing the honors of the biological laboratory at Cedar Point, our party of three came upon a strange Plover, as he danced before the lapping waves on the neighboring shore. A hundred yards or so below we saw another, evidently of the same species, entertaining his mate with a flight song. He would circle round and round with quivering wings, describing curves a hundred feet or so in diameter, and whistling the while a prolonged soft note with a rising inflection. Professor Jones was detailed on the case and soon came back reporting a nest of four eggs,—that shown in the accompanying illustration. He had concealed himself quietly in a clump of willows, and marked the female as she stole to her nest. The bird had settled once in the middle of the pathless sand, but upon some sudden misgiving had scampered away again without the astute observer's suspecting that she had visited her eggs. Upon her return, however, to the same spot, the truth became evident.

It is not fair to say that the nesting site was unmarked, for what is easier to see than a piece of waif coal, after one's attention has been called to it? And as for the nest itself, what could be more charming than a mosaic of flattened pebbles and bits of broken shell, to say nothing of such neighbors as a fish-bone and a joint and a half of straw?

While we were examining the nest, the birds kept circling about uneasily at a safe distance, uttering low cries in questioning or querulous tones—*quecph*, in a variety of inflections, and a longer *quecphlo* or *quecplew*. They had the habit also of scampering rapidly for a little ways and then pulling up short with a compensating bob and perk like the Killdeer. When squatted upon the ground with the lower whites obscured, the color of the Plover's back so perfectly matched that of the glowing sand as to render the bird almost invisible.

All the birds seen on this occasion, to the number of four or five, were of the belted variety, and the identification was confirmed through specimens secured by Professor Hine on the following day. He also took another set of four eggs about two weeks later from a nest in a similar situation, but some four hundred yards north of the first discovered site. From the advanced stage of incubation he was sure that the eggs belonged to a different pair of birds.

The question of the validity of the two forms of Piping Plovers is still open for discussion. The finding of this nest makes it certain that the breeding ranges of the alleged subspecies overlap considerably.



BELTED PIPING PLOVER,
(*Aegialitis melodia circumcincta*),
7-8 Life-Size.

Cliff Swallow (*Petrochelidon lunifrons* and *sub-species*)

Length, about 6 inches. The rufous upper tail coverts serve to distinguish this swallow from other species.

Range: Breeds from central Alaska and northern Canada south over the United States (except Florida) and to Guatemala; winters in South America.

The cliff and barn swallow are members in good standing of the original guild of masons, and their clever constructive work in nest building with mud pellets will bear the severest professional inspection. Through much of the west the cliff swallow still attaches its mud house to the faces of cliffs as from time immemorial, and it was not until the farmers' house and barn offered a satisfactory substitute for granite and sandstone bluffs, that the bird became really numerous in our eastern States. In some localities this swallow is not a welcome guest about the homestead as its nest is apt to contain parasites which the good housekeeper fears. Such parasites, however, are not to be dreaded as they will live only on birds. The cliff swallow performs invaluable service to man since its food consists wholly of insects, and among them are many pestiferous kinds, such as leaf bugs, leaf-hoppers and the boll weevil. Whoever then protects this and other species of swallows and encourages their presence on their premises does good and patriotic service and can moreover be sure of adequate reward.

Black Duck (*Anas rubripes*)

Range: Breeds from central Keewatin and northern Ungava south to northern Wisconsin, northern Indiana, and southern Maryland; winters from Nova Scotia south to southern Louisiana and Colorado; ranges west in migration to Nebraska and central Kansas.

The black duck is essentially confined to the Eastern States, usually migrating no farther west than Kansas, and that rarely. It is a favorite object of pursuit by sportsmen, and in the struggle to maintain existence has learned its lesson so well that it is still comparatively numerous in localities where less wary species would long ago have been exterminated. Originally a diurnal-feeding species, like most ducks, persecution has taught the black duck to seek safety on the broad ocean during the hours of daylight, and to resort to inland ponds for the purpose of feeding only after sunset. In order to protect this and other waterfowl one of the regulations under the Federal migratory bird law forbids shooting after sunset and before sunrise, and the enforcement of this regulation will probably do more for the preservation of the black duck than any other provision that could be devised. That protection for this species is sorely needed appears from the fact that throughout its range, except in a few localities, the black duck has of late years steadily diminished in numbers.

The black duck is excellent eating, and as experiments prove that it can be reared in captivity it may be raised for the market or be freed for restocking suitable localities.

The Florida black duck is a closely allied species, with similar habits, and is resident in Florida and along the Gulf Coast.

The Osprey (*Pandion haliaetus carolinensis*)

By C. Hart Merriam

Synonym.—Fish Hawk.

Description.—*Adult male*: Upper parts plain fuscous; tip of wing blackish; tail crossed by six or eight dusky bands; head white, heavily but narrowly streaked with blackish; an irregular dusky band proceeding backward from eye; feathers of occiput loosely ruffled, or presenting a crested appearance; under parts white, sometimes rufous-spotted on breast, but usually immaculate; lining of wing mottled—white and fuscous near edge, remainder white or buffy, dusky-barred distally; bill and claws black; cere and base of bill bluish black; feet bluish gray; iris yellow and red. *Adult female*: Similar but breast heavily marked with yellowish brown or fuscous. *Immature*: Like adult, but feathers of upper parts bordered terminally with white or buffy. The same distinction obtains between the sexes as in case of adults. Length 21.00-25.00 (533.4-635); wing 17.00-20.50 (431.8-520.7); tail 7.00-10.00 (177.8-254.); culmen 1.20-1.40 (30.5-35.6).

Recognition Marks.—Brant size; extensive white contrasting with fuscous, distinctive; labored flight; river- and lake-haunting ways.

Nest, an immense mass of sticks, broad-topped, lined centrally with bark-strips and soft materials; placed centrally on top of trees of various heights, or on isolated rocks of rivers, etc. *Eggs*, 2-4, dull or buffy white, heavily spotted, blotched, or overspread with chocolate; rarely almost or quite unmarked. Av. size, 2.45 x 1.81 (62.2 x 46.).

Range.—North American from Hudson Bay and Alaska south to the West Indies and northern South America. Breeds throughout its North American range.

Along the sea coast, up the large rivers, and wherever there are considerable bodies of water, the Fish Hawks are to be found more or less commonly according to the treatment which they have received at the hand of man. They are simple-hearted, honest folk, and deserve protection, if for no other reason, because they are fishermen. They are, however, cruelly persecuted in many sections of the country, and have been almost exterminated in this state; but to my mind it is a mighty mean sportsman who will begrudge a poor bird the taking of a few fish by methods not less sportsmanlike than his own.

The Osprey feeds exclusively upon fish and covers long stretches of water in its tireless search. It flies along at a height of fifty or a hundred feet above the water, and when its finny prey is sighted, pauses for a moment on hovering wings, then drops with a resounding splash, often quite disappearing beneath the water, but rising again quickly with a fish firmly secured in its talons. The bird upon rising immediately adjusts the catch, placing it head foremost so that it will offer the least resistance to the air in flight. Not infrequently the Hawk secures a fish which it is barely able to handle, and occasionally it strikes one so large that it is drawn under and drowned before it can disengage its claws.



AMERICAN OSPREY.
(*Pandion haliaetus carolinensis*).
 $\frac{2}{3}$ Life-size.

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Besides providing for a hungry family at home, this hard-working bird is purveyor in ordinary to His Majesty, the Bald Eagle, and upon the suggestion of the latter bird meekly drops its catch only to see it eagerly snatched in midair by the lazy tyrant. Pitifully screaming he turns back to the weary chase, for he must not go home empty-handed.

The nest, a huge aggregation of sticks and trash, is placed normally near the water's edge upon the cliffs or upon rocks projecting in mid-stream or else high in a neighboring tree. Persecution, however, will drive it to the deep woods miles from its fishing grounds. A typical nest, found on the banks of the Columbia River, is placed twenty-five feet high in a stout pine tree. It is flat on top, three feet across, but seven feet in depth, the mass representing the successive accumulation of many years, perhaps of generations. Within a little depression in the center, surrounded by soft materials, lie three handsome eggs, rich chocolate on a tinted ground. The female is on while her mate, tired of fishing, is standing by her side. Both rise at our approach and poise in midair above our heads, uttering feeble screams of protest as they suspect our oölogical purpose. A pair of Magpies have made their nest within the hospitable sides of this ancient pile, and these self-appointed camp followers add their voices to the general din.

Eggs are deposited in May and incubation lasts three and four weeks. Unlike the Eagle, the Osprey, if robbed, will make another attempt the same season, but lays usually not more than two eggs the second time.

Of the present breeding range of the Osprey it is difficult to form a just conclusion. No nests are known to me, nor have any been reported definitely within the state. A canoe trip of 150 miles down the Ohio River failed to discover any sign of occupation by these birds. It is pretty certain, however, that one or two pairs breed in the vicinity of the three large reservoirs, and it is very probable that they nest somewhere along the Lake Erie shore.

The Grosbeaks

By Joseph Grinnell

Have you ever heard of the sing-away bird,
That sings where the run-away river
Runs down with its rills from the bald-headed hills
That stand in the sunshine and shiver?
Oh, sing, sing away, sing away!
How the pines and the birches are stirred
By the trill of the sing-away bird!

And beneath the glad sun, every glad-hearted one
Sets the world to the tune of its gladness;
The swift rivers sing it, the wild breezes wing it,
Till earth loses thought of her sadness.
Oh, sing, sing away, sing away!
Oh, sing, happy soul, to joy's giver—
Sing on, by Time's run-away river!

—*Lucy Larcom.*

You would recognize it anywhere by its beak. And you may call this feature of the face a beak, or a nose, or a hand, or a pair of lips. In either case it is thick, heavy, prominent, the common characteristic of the grosbeaks. Individuals may differ in plumage, but always there is the thick, conical bill.

"Oh, oh, what a big nose you've got!" and "Oh, oh, what a red nose it is!" we exclaimed, when we first met the cardinal face to face in a thicket. In a moment we had forgotten the shape and tint of the beak in the song that poured out of it. It was like forgetting the look of the big rocks between which gushes the waterfall in a mountain gorge.

Not that the mouth of the grosbeak was built to accommodate its song, but, that being formed for other purposes, it nevertheless is a splendid flute.

Whichever he may be, the cardinal or the black headed, or the blue or the rose breasted, the grosbeak is a splendid singer.

On account of its gorgeous coloring, the cardinal is oftenest caged. But to those who love the wild birds best in their native freedom, the cardinal grosbeak imprisoned lacks the charm of manner which marks it in the tangle of wild grapevines and blackberry thickets. Seldom still in the wild, unless it be singing, the red beauty flits and dodges between twigs, and dips into brush and careens through the thickest undergrowth of things that combine to hide it, now here, now there, and everywhere. One would think its bright coat a certain and quick token of its whereabouts, but so active is the lively fellow that it eludes even the sharpest eye, a stranger mistaking its gleam for a rift of sunlight through the treetops.

Legend tells us that the beak of this bird was once ashen gray and the

face white. Once on a time, a whole flock of them were discovered in the currant rows of a mountaineer, who called on the gods of the woods to punish them, since he himself was unable to overtake the thieves. The gods, willing to appease the old man, yet loving the grosbeaks better, dyed their beaks crimson from that moment, and set black masks on their faces. Thus was a favor done to the cardinals, for ever after the juice of berries left no stain on their red lips, while the black masks set off their features to the best advantage, interrupting the tint of the beak and the head. He is no ecclesiastic, though he wear the red cap of the cardinal, which he lifts at pleasure, for he gets his living by foraging the woods and gardens for berries at berry-time.

The cardinal's companion is modest of tint, ashy brown with only traces of red below, deepening on wings, head and tail. Bird of the bush is she, and she places her loosely made nest in the thicket, where she can easily obtain bark fiber and dry, soft leaves and grass. In it she sees that three or four chocolate-dotted eggs, like decorated marbles, are placed. And she repeats the family history two or three times a season, where the season is long. At first the lips of the baby birds are dark; but they soon blush into the family red. In plumage they resemble the mother for a time, but before cold weather the males put on a coat of red with the black mask.

In the respect of molting the cardinals differ from their young cousins, the rose-breasted, the latter requiring two or three years to complete the tints of adult life.

But born in the thickets are the rose-breasts, just like the cardinals, the nest being composed of the selfsame fibers and woodland grasses. Strange craft of Mother Nature is this, to bring the rose-breast and the cardinal from eggs of the very same size and markings. But so she does; so that a stranger coming upon either nest in the absence of the mother bird might mistake it for that of the other. You can't be certain until you see the old birds.

The rose-breasted grosbeaks are found east of the Rocky Mountains and north into Canada. It migrates south early, and returns to its summer habitat rather late in spring. The lips of the rose-breast are white, not red, while the feet are grayish blue, differing from the brown feet of the cardinal.

How did it come by its breast? Why, legend has it that the breast was white at the start. One day he forgot himself, not knowing it was night, he was so happy singing the funeral hymn of a robin-redbreast that had died of a chill in molting time, as birds do die when the process is belated. And the grosbeak sang on, until a night-owl spied him and thought to make a supper of a bird so plump. But the owl mistook his aim and flew away with only a beakful of the breast feathers, he not taking into account the nearness of the molt. The grosbeak escaped, but lacking a vest.

The robins gathered pink wild-rose leaves and laid them on the heart of the singer, not forgetting to line the wings, and so from that day to this the psalm singer is known as the rose-breasted grosbeak.

The head and neck of the male and most of the upper parts are black, the tail white and black combined, wings black variegated with white, and the

middle breast and under wing-coverts the rich rose that deepens into a carmine. The beak is white.

The mother bird is streaked with blackish and olive brown above, below white tinged with dusky, under wing-coverts the tint of saffron. Her beak is brown.

These beautiful birds may be seen in the haunts of autumn berries, early spring buds that are yet incased in winter wrappings, and orchards in the remote tops of whose trees have been left stray apples. By the time these are frost-bitten they are "ready cooked" for the belated rose-breasts, whose strong beaks seem made on purpose to bite into frozen apples. But frozen apples have a charm of taste for any one who takes the trouble of climbing to the outer limbs for a tempting recluse. Better were more of them left in the late harvest for boys and girls and the rose-breasted grosbeaks.

An invisible thread fastened to a solitary apple on a high twig, and connected inside of the attic window of a cottage, suggests winter fun of a harmless sort. The grosbeaks fish for the apple, which all of a sudden is given a jerk from a watchful urchin inside the window; and the bird realizes the historical "slip 'twixt the cup and the lip." The string being, to start with, almost invisible, is from necessity very weak as well, and breaks at about the third jerk. The fun for the participants inside the window at the other end of the string is over for a time, and before it is readjusted the apple has several bites in it. And besides, there are other apples.

On the Pacific coast we have the black-headed grosbeak, cousin of the others and equally gifted in song.

The sides of the head, back, wings and tail of this male are black, though the back and wings are dotted with white and cinnamon-brown. The neck and under parts are rich orange-brown, changing to bright, pure yellow on the belly and under wing-coverts. The bill and feet are dark grayish blue. The female and her young differ in the under parts, being a rich sulphur-yellow. Upper parts are olive shaded, varied with whitish or brownish stripes. The habits of the black-headed grosbeak are like those of the others described.

From our custom of making the grounds as attractive to all wild birds as possible, never relenting our vigilance in regard to the feline race, we have had splendid opportunities of studying this bird. They have nested with us for three years, beginning in wary fashion and ending in perfect confidence.

The first of the season we saw only the male, and he kept high in the blue-gum trees, fifty or sixty feet or more above ground, singing as soon as everybody was out of sight, but disappearing if a door opened. We thought him a belated robin, so do the songs of the two birds impress a stranger. For weeks we could catch not so much as a glimpse of the singer, though we hid in the shrubbery. Shrubby was no barrier to the sight of the keen little eye and ear above. Then we took to the attic, and from a little roof corner-pane beheld the musician.

But his song was short and ended unfinished, so suspicious was the bird. Gradually he came to understand that no shotgun disturbed the garden stillness, even though he sat on an outer bough, and no cat lurked in the roses. He also

appeared to notice that nobody played ball on the greensward, nor threw stones at stray chickens. Altogether circumstances seemed favorable to Sir Grosbeak, and he brought Madam along down from the mountain cañons.

By midsummer of the second season the two were seen at sunrise as low as the tallest of the orange-trees, but they flew higher or disappeared if the door were opened. It was the year that we first planted the row of Logan berries, a new cross between the blackberry and raspberry. It was between the orange and lemon trees, in a quiet corner of the orchard, and the grosbeaks espied them, reddening a month before they ripened. By getting up at dawn we made sure that nesting operations had begun with twenty feet of the Logan berries. But which way? It was not until the eggs were laid that we found the site on a low limb of a fig tree adjoining the berry row. The nest was made solely of dry dark-leaf spines, and so transparently laid that we could distinguish the three eggs from below. There was no lining, plenty of ventilation in this and other of these grosbeaks' nests observed in the foothills being the rule. Perhaps the climate induces the birds to this sanitary measure. Certain it is that this nest could be no harbor for those insect foes that too often make life miserable for the birdlings.

The summer passed, and we gave up the row of berries to the grosbeaks. There were but few anyway, and we wanted the birds. And there was other fruit they were welcome to.

This season the grosbeaks have brought off three broods within fifty feet of the house. The male sings in the low bushes and trees, and does not think of punctuating his notes with stops and pauses, even though we stand within a few feet of him. In fact, the birds are now as tame as robins. Young striped fledglings grope about in the clover, or flutter in the bushes as fearless as sparrows. If we pick them up they will support themselves by a grip on the hand and swing by their strong great beaks, screaming at the top of their shrill voices to "let go!" when it is themselves that are holding on with might and main. If they scream long enough, and their beaks do not weaken in their clutch, the mocker comes to the rescue and scolds us, while we explain the situation, extending our hands with the grosbeak clinging to the palm.

So far as we have known, all the nests in our grounds have been built in the crotch of a fig tree. The fig has sparse foliage and affords little shelter. But then there are figs that ripen most of the summer—and figs are good for baby grosbeaks. Once we discovered a nest by accident. The bees at swarming-time settled in the top of a fig tree, a place not at all suitable, in our opinion. We were busily engaged in tossing dust into the tree to frighten the bees out, when a grosbeak appeared, scolding so hard in her familiar, motherly tone that we knew we were "sanding" her nest as well as the bees. And we found it all right! She went on with her work after we had attended to the bees.

On account of the fondness of the birds for fruit and buds, the grosbeaks might easily become resident in any home grounds. Low shrubbery they love when once they have become familiar; unlike the thrushes, not caring particularly for damp places. Dry, baked-in-the-sun nooks, crisp undergrowth, and especially

untrimmed berry rows fascinate them. During mating-season the male sings all the time when he is not eating, singing as he flies from perch to perch, and like others of the family, has been accused of night serenades. We are unable to know certainly if it is our grosbeak or the mocker that wakes us at midnight. It is probably the mocker, who has stolen notes from all the birds.

The Canada Goose (*Branta canadensis*)

By Lynds Jones

Synonyms.—“Wild Goose”; Common Wild Goose.

Description.—*Adult*: Head and neck glossy black; a large white triangular patch on either cheek, the two usually confluent on throat—occasionally an indistinct white collar at base of black; back and wings rich grayish brown; fore-breast and below lighter grayish brown, tipped with pale fulvous or grayish white; heavier toned on sides, where presenting a shingled appearance and shading into color of back; lower belly, under tail-coverts, longer upper tail-coverts and flanks well up on rump, pure white; rump and tail black; primaries blackening at tips; bill black; feet dusky. *Immature*: Similar, but white of cheeks and throat more or less mixed with blackish. Length 35.00-42.00 (889.-1066.8); wing 20.00 (508); tail 7.00 (177.8); bill 2.30 (58.4); tarsus 3.55 (90.2).

Recognition Marks.—Eagle size; black head and neck with white cheek-patches, and large size distinctive.

Nest, on the ground, on a cliff, or in a tree (a deserted Osprey's nest and the like), lined with down. *Eggs*, 4 or 5, light greenish buff, or buffy white. Av. size, 3.52 x 2.30 (89.4 x 58.4).

Range.—Temperate North America, breeding in the northern United States and British Provinces; south in winter to Mexico.

HONK, *honk*—*honk*, *honk*! What a stirring sound is that which summons us from whatever task indoors, and hurries us out hatless, breathless, into the crisp March air to behold a company of Wild Geese passing forward into the frosty North! *Honk*, *honk*! We think madly of our gun upstairs, for the Geese are provokingly near, and we hear the thrilling swish of the low-sweeping wings; but we take it out in great boasts to our similarly hatless neighbor, of what we could have done if the gun had been put together and we had known that those foolish Geese were coming right over town. And when the great birds become a row of trailing points on the northern sky, a fever of strange unrest burns within our veins, and we wonder through what ancestral folly our wings were clipped, and our race condemned to unceasing

For the Canada Goose there are but two points of the compass, North and South; and unlike most migrants, he does not go by the map, nor follow favorite paths through the air, but flies straight over hill and dale, city and



CANADA GOOSE.

$\frac{1}{2}$ Life-size.

hamlet alike, until the goal is reached, or until the weather discourages further movement for a time. The Geese move usually at a considerable height, forming open V-shaped figures, with the oldest or strongest gander in the lead at the apex; or else in single oblique lines. Each bird demands as clear a field as possible, and this is best secured by an arrangement which allows each goose to look over the wings of the one next preceding, right or left, according to the branch of the V which it occupies. The line of march shifts and changes under the eye, as the hindmost birds become dissatisfied with their positions, and change sides, or as tired leaders give place to fresher birds; and the changes are accomplished not without much lordly discussion in high-pitched *honks*.

When selecting a pond or corner of the lake in which to spend the night, the birds first circle about cautiously at a safe height, and then slide down the air from a point a mile or so away, approaching the water silently and at a low angle. In rising from the water or the ground, the Geese prefer to make a little run, or preliminary flutter, to get headway, but are capable of clearing either by a sudden spring. The flight is heavy and labored at near aspect, but strong and swift when under way.

Like all Geese this species feeds principally upon tender herbage, berries, sedge roots and aquatic plants. Stubble-fields afford a tempting banquet, and waste corn is eagerly gathered up. In winter the birds are very regular about their meals, rising punctually at daybreak and flying inland to feed for two or three hours in the grain fields. The middle of the day is passed quietly upon the pond, dabbling for water-cress and duck-weed, or enjoying one-legged slumbers on the sand-bar. Hunger drives them to forage again late in the afternoon, usually at the same spot visited in the morning. At such times the Geese are exceedingly vigilant and wary; and it would appear that when feeding upon the ground, one or more of their number are charged with sentry duty. In countries where winter shooting is still allowed, rifle pits are dug during the night in grain fields known to be frequented by the Geese, and their call imitated by the crouching hunter as they approach at early dawn.

Usually the nests are made of grass and placed near the borders of sloughs, or else upon the high prairie. Eggs have been taken from the top of muskrat houses, or found on weedy sand-bars, without other nest-lining than the down from the bird's breast. Stories of their occupying Ospreys' or Eagles' nests early in the season are numerous, and, I believe, well founded. In June, 1896, while traveling in northern Washington, near the British Columbia line, I came upon two large Ospreys' nests placed at a great height in balm trees, near the Okanogan River, and occupied by the owners. I was informed by a neighboring farmer sportsman, in whose word and judgment I had implicit confidence, that earlier the same season two pairs of White-cheeked Geese (the western form of the Canada Goose) had successfully reared their broods in the same nests.

Canada Geese are readily domesticated and breed in captivity. The following interesting notes on the habits of these Geese in captivity were made

by Mr. William Dutcher, in the Auk,¹ reporting in part the experience of Captain Lane of Shinnecock Bay, Long Island: "Captain Lane has had remarkable success in breeding Canada Geese in confinement, and has kindly furnished me with the following information regarding their habits during the breeding season: 'They make their nests of dried grass, raising them about twelve inches from the ground. They feather them when they begin to lay, which is about May 1, None lay under three years old; the first season four eggs are laid, five the second season, and when older six and seven. A goose never has more than one mate. The gander never sits on the nest, but while the goose is sitting never leaves her. The time of incubation is four weeks. The young when hatched are strong enough to take care of themselves, that is, they eat grass and walk and swim as soon as they get dry. They will eat meals on the second day. They are in the down four weeks, and are fully grown in six weeks. When swimming the gander goes ahead, the young next, and the goose follows, invariably.'"

The Scissor-Tailed Flycatcher (*Muscivora forficata*)

By W. Leon Dawson

Synonyms.—Swallow-Tailed Flycatcher; Scissor-Tail.

Description.—*Adults*: General color hoary-ash, lighter below, white on throat, darkening on nape, mingling with ochraceous or rusty on back; a concealed scarlet or orange crown-patch; wings fuscous to blackish, with hoary and buffy-gray edgings; first primary deeply emarginate and attenuate; tail deeply forked, the outer pairs greatly produced,—three or four times the length of shortest feathers—the ordinary feathers black, and the longer ones black-tipped, but white or faint salmon-colored for four-fifths their length; a scarlet tuft on the side of the breast; lining of wings, sides of belly, and flanks bright salmon, fading on crissum; bill and feet black. *Immature*: Similar; tail undeveloped; no crown-patch; first primary not emarginate. Length to fork of tail 7.50-8.50 (190.5-215.9); wing about 5.00 (127.); tail 5.00-10.00 (127.-254.); bill .65 (16.5). Females somewhat smaller, and with less developed tails.

Recognition Marks.—Chewink size (comparing body sizes, exclusive of tail); hoary-ash, scarlet and salmon coloration; tail greatly produced, deeply bifurcated.

Nesting.—"Nest, of sticks, etc., lined with feathers and other soft materials built in trees. Eggs, 3-5, .89 x .67 (22.6 x 17.), pure white or creamy white, boldly but sparingly spotted with rich madder-brown and lilac-gray."

Range.—Texas, Oklahoma, Indian Territory, southern Kansas, southwestern Missouri, south through eastern Mexico to Costa Rica. Accidental in southern Florida (Key West), New Jersey, New England, York Factory (Hudson Bay Territory), etc.

This exceedingly graceful Flycatcher is known to be a great wanderer, but

SCISSOR TAILED FLYCATCHER.

(*Mniotiltus forficatus*).

$\frac{2}{3}$ Life-size.



its normal range is confined to Texas, with adjacent territory on the north and south. The species is admitted to our state list on the authority of Mr. Oliver Davie, who reports a single example said to have been taken near Marietta.

The Scissor-tail is so named from a habit it has of opening and closing its elongated tail-feathers like the blades of a pair of scissors. These remarkable appendages may possibly serve the bird as balancers, or brakes, in flight, but a more natural explanation would seem to be that they were provided to enable the owner to work off his surplus energies, and to grace his bold sallies after insect prey. The birds are rather quarrelsome, especially among themselves. A fight between four or five males such as one observer reports, must be a spectacular affair—equal to one of those other occasions celebrated in the song of their native land, "When dey's razors a'flyin' troo de air."

Like the kingbird it prefers the open country to forests, and seems to be best suited with prairies or rolling country with scattered trees on which it can nest. In settled territory it takes kindly to orchards and even gardens in the near vicinity of buildings. While generally a quiet bird that lives on good terms with its neighbors, it displays something of the aggressive spirit of the kingbird in relation to crows and hawks, which it attacks with great vigor when they appear near its nest.

One of his favorite performances is to fly up and, with rattling wings, execute an aerial seesaw, a line of sharp-angled VVVVVVVV's, helping himself at the short turns by rapidly opening and shutting his long white scissors. As he goes up and down he utters all the while a penetrating scream *ka-queé-ka-queé-ka-queé-ka-queé-ka-queé*, the emphasis being given each time at the top of the ascending line.

Frequently when he is passing along with the even flight of a sober-minded crow and you are quietly admiring the salmon lining of his wings, he shoots rattling into the air, and as you stare after him drops back as suddenly as he rose. He does this apparently because the spirit moves him, as a boy slings a stone at the sky, but fervor is added by the appearance of a rival or an enemy, for he is much like a *Tyrannus* in his masterful way of controlling his landscape. He will attack caracaras and white-necked ravens, lighting on their backs and giving them vicious blows while screaming in their ears.

Food: Mostly spiders, beetles and other harmful insects. Less than one per cent useful to man.

The English Sparrow as a Pest

By Ned Dearborn

The English sparrow was introduced into America a little more than 60 years ago, and is now distributed over nearly all of the United States and southern Canada. This rapid dissemination is a result of the bird's hardiness, extraordinary fecundity, diversity of food, aggressive disposition, and almost complete immunity from natural enemies.

The English sparrow among birds, like the rat among mammals, is cunning, destructive, and filthy. Its natural diet consists of seeds, but it eats a great variety of other foods. While much of its fare consists of waste material from the streets, in autumn and winter it consumes quantities of weed seed and in summer numerous insects. The destruction of weed seed should undeniably count in the sparrow's favor. Its record as to insects in most localities is no so clear. In exceptional cases it has been found very useful as a destroyer of insect pests. For example, during a recent investigation by this bureau of birds that destroy the alfalfa weevil in northern Utah, English sparrows were feeding their nestlings largely on weevil larvæ and cutworms, both of which are very injurious to alfalfa. In this case the sparrows, attracted by grain in the fields and poultry runs and by the excellent nest sites afforded by the thatched roofs of many farm buildings, had left the city and taken up their abode in the country where the weevil outbreak subsequently occurred. Unfortunately, however, farmers can rarely expect such aid against their insect foes. Wherever this bird proves useful, however, it is entitled to protection and encouragement in proportion to its net value.

Under normal conditions its choice of insects is often unfavorable. Out of 522 English sparrow stomachs examined by the Biological Survey, 47 contained noxious insects, 50 held beneficial insects, and 31 contained insects of little or no importance. The bulletin just referred to shows conclusively that, aside from the destruction of weed seed, there is, in general, very little to be said in the sparrow's favor.

On the other hand much is to be said against the bird. It destroys fruit, as cherries, grapes, pears and peaches. It also destroys buds and flowers of cultivated trees, shrubs and vines. In the garden it eats seeds as they ripen, and nips off tender young vegetables, especially peas and lettuce, as they appear above ground. It damages wheat and other grains, whether newly sown, ripening, or in shocks. As a flock of 50 sparrows requires daily the equivalent of a quart of wheat, the annual loss caused by these birds throughout the country is very great. It reduces the number of some of our most useful and attractive native birds, as bluebirds, house wrens, purple martins, tree swallows, cliff swallows, and barn swallows, by destroying their eggs and young and by usurping nesting places. It attacks other familiar species, as the robin, wren, red-eyed vireo, catbird and mocking bird, causing them to desert parks and shady streets of towns. Unlike our native birds whose place it usurps, it has no song, but is

noisy and vituperative. It defiles buildings and ornamental trees, shrubs and vines with its excrement and with its bulky nests.

The evidence against the English sparrow is, on the whole, overwhelming, and the present unfriendly attitude of the public towards it is reflected in our State laws. Nowhere is it included among protected birds.

Although English sparrows are widely distributed as a species, individuals and flocks have an extremely narrow range, each flock occupying one locality to which its activities are chiefly confined. This fact is favorable to their extermination, for when a place has once been cleared of sparrows some time elapses before it is reoccupied. This tendency to remain on special territory was well shown during a recent experiment with a flock in a small city garden. During the fall steady trapping reduced the resident flock in the garden to a dozen individuals, 274 birds having been trapped. The survivors were poisoned. Though another flock lived in the street just beyond the fence, the garden was sparrow free for three months. In the following spring a few sparrows appeared, but were soon trapped. After this the garden continued throughout the summer without a resident flock, and only rarely was it visited by sparrows from other parts of the neighborhood.

AIDING NATIVE BIRDS AGAINST THE ENGLISH SPARROW

One of the greatest objections to the English sparrow is its aggressive antagonism toward the small native birds, especially those familiar species which, like itself, build their nests in cavities. Nest boxes provided for bluebirds, martins, or wrens—birds both useful and pleasing—too often fall into the possession of this graceless alien, either by the right of discovery or by piratical assault. Fortunately it is possible to aid the native birds by selecting suitable nest boxes. Thus, a box having an entrance 1 inch in diameter will admit house wrens, but not sparrows. Boxes for larger birds may be constructed so that unwelcome tenants can be readily evicted and at the same time acceptable to more desirable species. When a sparrow has had its nest and eggs removed from a box, it not only as a rule seeks another place for its next nest, but is likely to avoid that type of nest box in future.

The Sandhill Crane (*Grus mexicana*)

By William C. Mills

Range: resident in Louisiana and Florida; bred formerly from southern British Columbia, Saskatchewan, Manitoba, and western Ontario south to California, Colorado, Nebraska, Illinois and Ohio; winters from California, Texas and Louisiana south to Mexico.

The big sandhill crane seems most at home on the broad expanse of the western prairies and marshes which offer it food and security. It is still common, however, in Louisiana and southeastern Florida, where the prairies and

savannas are large enough to suit its tastes. Thus, as pointed out by Cooke, the two breeding areas of this species are separated by a distance of more than 600 miles. As the crane struts majestically about, it keeps a watchful eye for enemies, and when the danger proves threatening, it spreads its broad wings and with measured beats flies slowly away. Its loud buglelike notes, when heard coming from mid-air, as the birds slowly pass out of sight, have a delightful musical quality. The food of this crane consists of a large variety of animal life, among which are grasshoppers and meadow mice, so that a distinct claim of economic usefulness may be made for it. Unfortunately for its safety its meat is by no means unpalatable and in some localities it is much sought after for food. Unquestionably, however, the restriction of its breeding and feeding grounds by settlement has had more to do with the decrease in its numbers than firearms. Probably the fate of such a large bird, requiring so much space and freedom, can not be averted, but it can at least be postponed, and every man who carries a gun should do his part by refraining from making a target of its big body.

Of the three species of cranes living in the United States the brown crane is the smaller and is confined to the Middle West.

Synonyms.—Southern Sandhill Crane; Brown Crane.

Description.—Exactly like preceding species, but larger. Length about 45.00 (114.3.); wing 22.00 (558.8); tail 8.00 (203.2); bill 5.50 (139.7); depth at base 1.05 (26.7); tarsus 10.25 (260.4); middle toe and claw 4.00 (101.6).

Recognition Marks.—Eagle size; slaty gray or brownish color; crane proportions of bill, neck and tarsus; considerably larger than the preceding species.

Nest, a platform of roots, reeds, weed-stalks, etc., raised slightly above water or mud of swamp. *Eggs*, 2, grayish olive or drab, spotted and blotched distinctly and obscurely with reddish brown. Av. size 4.00 x 2.45 (101.6 x 62.2).

Range.—Southern half of North America; rare near the Atlantic Coast, except in Georgia and Florida.

In 1895, I first saw the Sandhill Crane in what is known as the New Haven marsh, situated within a few miles of Chicago Junction. This was on the 15th of April, and I was informed by people living in the neighborhood that the Crane usually returned between the 15th of March and the 1st of April. They are, at this time, seen in small flocks varying in number from three to nine; however, four or five is the usual number.

In the following year ('96), in the second week of April, I again observed a pair of these birds, at about the same place. A young man living in the neighborhood collected, in the latter part of May, a set of the Sandhill Crane's eggs and placed them under a setting hen. In a few days they hatched, but he was only able to raise one of the birds; this became quite a pet, and when I saw it in the autumn of that year it was very large and seemed to govern everything in the henery. The bird was quite tame and would follow one around if there was any prospect of its receiving food. The following year, 1897, I again visited this marsh, on the 15th of May, intending to find a nest of this bird if possible. I was rewarded by finding two nests within one-fourth of a



mile of each other. They were placed in the open, upon a portion of the marsh land that had been under cultivation for a few years prior to my visit, but had again grown up in weeds.

The first nest was built in a small hollow in the ground and made of a few roots and weeds and some small bits of grass. These eggs were perfectly fresh, and were of an ashy yellow, spotted and blotched with brown and reddish brown. One of the eggs had light splotches of gray upon it. This set is now deposited in the oölogical collection at the Ohio State University.

The second nest, which was located in the same field, was similar in every respect to the first, except that it was placed on a little more elevated ground and contained more grass as a lining. These eggs were slightly incubated.

The nest of these birds can readily be located, as the male bird is likely to be in the vicinity, and upon being disturbed, takes flight with a note of warning to his mate. She usually follows if you are coming in the direction of the nest. It is my impression that these birds leave the nest and run for a little distance before they take flight, as in both cases the birds ran from twenty-five to thirty feet from the nest before they started to fly. I marked well the position where they left the ground, and in my search I found they had gone that distance before flying.

On the 18th of the month I again visited the marsh, intending if possible to get another sight of these birds, but they had left that part of the marsh and had no doubt gone farther toward the center and uncultivated part, which is less likely to be disturbed by man. On this day I went to the southern section of the marsh and was successful in flushing a Sandhill Crane from her nest. I found the eggs to be in a high state of incubation, the nest having the appearance of being long occupied, and I concluded to leave the eggs and return in a few days and see the young; but it was upwards of a week before I was able to visit the place, and then I found that the eggs had hatched and the young had left the nest. I made a number of trips to the vicinity of the nest later in search of the birds, but was not able to see any but adult birds, and those only occasionally. During September they can again be seen in small flocks, and it is supposed that they leave this region the latter part of September or the first of October.

I have always found these birds exceedingly shy and difficult to approach. In fact, I have never been within gunshot of one of them even during the nesting season. However, with a field glass I got a good view of one of these birds feeding, and even at this great distance the bird's vigilance was never relaxed. For after bending his long neck to the ground he rises again very erect, and at full length surveys the surroundings upon all sides. He resumes his repast, but should anything appear to view he stands perfectly motionless, surveys it closely, and invariably takes flight upon the slightest move.

The Oven Bird (*Seriurus aurocapillus*)

By Thomas Nuttall

Length, a little over 6 inches. Above mostly olive green; below white, breast and sides streaked with black.

Range: Breeds from southern Mackenzie, Ontario, southern Labrador and Newfoundland south to Wyoming, Kansas, southern Missouri, Ohio Valley and Virginia; also in mountains of Georgia and South Carolina; winters in southern Florida, southern Louisiana, Bahamas, West Indies and southern Mexico to Colombia.

The oven-bird is one of our best known birds and one the woodland stroller is sure to get acquainted with, whether he will or no, so common is it and so generally distributed. In moments of ecstasy it has a flight song which has been highly extolled, but this is only for the initiated, its insistent repetition of "teacher, teacher, teacher," as Burroughs happily phases it, is all the bird vouchsafes for the ears of ordinary mortals. Its curious domed-over grass nest is placed on the ground and is not hard to find. The food of the oven-bird does not differ greatly from that of other warblers, notwithstanding the fact that the bird is strictly terrestrial in habits. It consists almost exclusively of insects, including ants, beetles, moths, span worms and other caterpillars, with a few spiders, millepods and weevils.

During the summer this rather common bird is found throughout the forests of the United States and Canada, even as far west as Oregon. It arrives in the middle and northern States about the middle or close of May, and departs for tropical America, Mexico, and the larger West India Islands early in September.

The Oven-bird, or Golden-crowned Thrush, is shy and retiring, and is never seen out of the shade of the woods; it sits and runs along the ground often, like the lark; it also frequents the branches of trees and sometimes moves its tail in the manner of the Wag-tails. It has few pretensions to song, and, while perched in the deep and shady part of the forest, it utters at intervals a simple long reiterated note of 'tsh'e tshe tshe tshe, rising from low to high and shrill, so as to give but little idea of the distance or place from whence the sound proceeds, and often appearing from the loudness of the cadence to be much nearer than it really is. As soon as discovered, like the Wood-thrush, it darts at once timidly into the depths of its sylvan retreat.

During the period of incubation, the deliberate lay of the male, from some horizontal branch of a forest tree, where it often sits, is a 'tshe te tshe te tshe te tshe', gradually rising and growing louder. Toward dusk in the evening, however, it now and then utters a sudden burst of notes with a short agreeable warble, which terminates commonly in the usual 'tshe te tshe.

Its curious oven-shaped nest is known to all sportsmen who traverse the solitary wilds which it inhabits. This ingenious fabric is sunk a little into the ground, and is generally situated on some dry and mossy bank contiguous



OVEN BIRD.

½ Life-size.

to bushes, or on an uncleared surface. It is formed with great neatness of dry blades of grass, and lined with the same; it is then surmounted by a thick inclined roof of similar materials, the surface scattered with leaves and twigs, so as to match the rest of the ground, and an entrance is left at the side. The eggs, four or five in number, are white, irregularly spotted near the greater end with reddish-brown. When surprised the bird escapes or runs from the nest with the silence and celerity of a mouse. If an attempt be made to discover the nest from which she is flushed, she stops, flutters and pretends lameness, and, watching the success of the maneuver, at length when the decoy seems complete she takes to wing and disappears.

The Oven-bird is another of the foster parents sometimes chosen by the Cowbird; she rears the foundling with her accustomed care and affection, and keeps up an incessant *tship* when her unfledged brood are even distantly approached. These birds have often two broods in a season in the middle States. Their food is wholly insects and their larvæ, particularly small ants and beetles, chiefly collected on the ground.

Birds

W. H. Davies

When our two souls have left this mortal clay,
And, seeking mine, you think that mine is lost—
Look for me first in that Elysian glade
Where Lesbia is, for whom the birds sing most.

What happy hearts those feathered mortals have,
That sing so sweet when they're wet through in spring!
For in that month of May when leaves are young,
Birds dream of song, and in their sleep they sing.

And when the spring has gone and they are dumb,
Is it not fine to watch them at their play;
Is it not fine to see a bird that tries
To stand upon the end of every spray?

See how they tilt their pretty heads aside;
When women make that move they always please.
What cozy homes birds make in leafy walls
That Nature's love has ruined—and the trees.

Oft have I seen in fields the little birds
Go in between a bullock's legs to eat,
But what gives me most joy is when I see
Snow on my doorstep, printed by their feet.

The Black-Throated Blue Warbler (*Dendroica caerulescens*)

By I. N. Mitchell

Description: Adult male: Above, dark dull blue, occasionally spotted with black on the back; extreme forehead, sides of head, chin, throat, sides of breast, and sides, intense black; remaining lower parts pure white; wings and tail blackish, edged on exposed portions with blue or whitish; a large white spot at base of primaries on both webs; secondaries and lower tertials broadly edged with white; three outer pairs of tail-feathers broadly but decreasingly blotched with white on inner webs; bill black; feet brown. Adult female in spring: Above dull greenish blue; no pure black anywhere; sides of head dusky; below white, sordid, or with a bluish buffy suffusion; white spot at base of primaries reduced but still prominent. Adult female in autumn: Similar but with more yellow everywhere; therefore dull olive-green above, dingy yellow below; brownish washed on sides. Immature male: Like adult male, but upper parts greenish; less black below. Immature female: Like adult female in autumn. Adult male in winter: Above touched with olivaceous; below black somewhat restricted; flanks touched with brownish. Length 4.75-5.50 (120.6-139.7); av. of five Columbus specimens: wing 2.53 (64.3); tail 1.86 (47.2); bill .39 (9.9).

Recognition Marks: Medium size; black, dull blue, and white in masses of male; white spot at base of primaries in female.

Nesting: Nest, of bark-strips, twigs, and grasses, lined with fine rootlets and horse-hair; placed in low bushes near ground. Eggs, 4 or 5, dull white, with spots and dots of olive-brown, chiefly wreathed about larger end. Average size, .68 x .51 (17.3 x 13.).

Range: Eastern North America to the Plains, breeding from northern New England and northern New York northward to Labrador, etc. West Indies and Guatemala in winter.

The wild crab-apples were in bloom; the rose-pink saucers and the rosier buds covered the hillside. It was good to be alive in the midst of such loveliness, and it was in just such a setting that a company of young people, very much alive, was birding in Johnson's Woods.

The robin, appearing unusually plump and well cared for, was very much in evidence; bluebirds with the sky on their backs had come in for much admiration, especially to one of the girls who was admiring them for the first time; the gold-finches were foraging upon the ground and looked like animated dandelions; a single hermit thrush, lingering behind his company, tilted his red-brown tail as he alighted among the blossoms; olive-backs and veeries scurried out from beneath the bushes at our approach, giving scant opportunity for careful inspection; a flicker displayed his scarlet crescent and white rump as he visited tree after tree; yellow warblers full of the spring song and brilliant redstarts full of their coquetry had enabled us to renew old acquaintances. The young people, although enjoying the old friends, were desirous of making at least one new one; nor were they disappointed.



BLACK-THROATED BLUE WARBLER
(*Dendroica caerulescens*, Gmel.).
Life-size.

As we turned from the hillside and skirted the marsh with its thickets of willow, the well trained leaders halted and beckoned the rest to approach with care. At the base on an old tree, quite similar to the one in our excellent illustration, sat the new bird of the day. His size, shape, bill and beauty all suggested warbler. The sunlight on the back made it appear much bluer than it is in the picture; the bill, cheeks, throat and wings were jet black and the under parts pure white. Nor did we fail to note the white triangle on the side of the wing.

A few of the group knew this beauty to be the black-throated blue warbler and so he was proclaimed.

Whence came this trustful little bird? Did he not know that we were human and therefore to be feared? Why did he permit us to gather about him almost within arm's length? He is returning from a winter's visit in Cuba, Jamaica or Haiti to his birthplace somewhere north of Wisconsin. Perhaps in this long pilgrimage he has kept to the forests and to the air and has thus escaped acquaintance with man. Whatever the reason, we felt flattered by his unusual confidence or fearlessness.

Not until each of us had had a good look at him did he part company with us, and then he went deliberately, picking his way over the clusters of apple blossom, taking toll apparently, from the insects that were visiting the flowers or living on their stems.

As he flew farther and farther away from us the little white triangle on the side of the wing was voted to be the very best field mark. On our way home fortune favored us with a chance to see the female, and it was this same little triangle that settled her identity. It was small and faint but unmistakable. The back was olive rather than blue, and the under parts were a dull whitish or yellowish.

We had not the good fortune to hear the song of the male. We did not miss much so far as music is concerned, for it is short and wheezy. Three notes only constitute his repertoire. They are of the same pitch and may be represented by the words "wheeze, please wheeze," the last one being drawled out about twice as long as the other two and with the rising inflection.

We renewed acquaintance with the red-winged blackbird, heard the scream of the bluejay and the ringing whistle of the meadow lark from a neighboring hillside and the rippling twitter of the chimney swift overhead. A Baltimore oriole flashed past us like a rocket and the trip was brought to a very happy conclusion by a rose-breasted grosbeak that was picking at an old fruit cluster of a staghorn sumac and by a small flock of cedar waxwings that were gleaning the last of the berries on a mountain ash tree.

We "bagged" thirty birds with our double barreled "opera guns" and voted the trip a charming success.

The Bird and the Citizen

By Frank M. Chapman

While, indirectly, the citizen of course shares in the services rendered by birds to our agricultural interests, birds have an additional claim upon his good will. Birds destroy many undesirable insects, mosquitoes, for example, some species of which have recently been found to be so inimical to the health of the human race. Birds further increase the healthfulness of the world by acting as scavengers. It would be difficult to overestimate the value of the Buzzards, Vultures, and other offal-eating birds to the countries in which they live. In most instances the economic importance of these birds is too obvious to be overlooked, and they are, therefore, protected by law, and, by what is far more powerful than law, public sentiment.

In our Southern States the Turkey Buzzard and Black Vulture, or "Carrion Crow" have become so numerous and tame as a result of the protection there given them that they walk around the streets of the towns and cities in great numbers, and with no more evidence of fear than is shown by poultry. Every one realizes that a living Buzzard is of infinitely more value than a dead one, and in many years' experience in the South I have never seen a Buzzard molested.

In New York, it is true, we have no Buzzard, but on the waters of our sea-coast, harbors, lakes and larger rivers, their place is taken by Gulls of several species, which, in feeding on the forms of aquatic life which, in dying, come to the surface, perform a sanitary service of the first importance.

While a discussion of the economic relations of birds might be supposed to confine us to a consideration of the material side of their lives he would indeed be lacking in imaginative power, in ability to appreciate the usefulness or beauty, who did not find in these pre-eminently graceful, musical, attractive creatures a source of pleasure to mankind deserving our serious attention from the physiologic, and hence, economic standpoint.

The pursuit which takes us afield and gives us rest and exercise combined, and increases our resources by broadening our interest in nature, is not merely a pastime, but a recreation benefiting both mind and body, and better preparing us for our duties as citizens of the State. No one would think of asserting that the value of New York's game animals was to be reckoned in the terms of the bill-of-fare. A few thousand dollars would express their wealth to the butcher or restaurateur, but to the true sportsman they are an exhaustless mine of wealth. A day with dog and gun, rod or rifle may bring small returns from a pecuniary point of view, but who can calculate the amount of physical good and pure enjoyment it has afforded? Game bag and creel may, indeed, be empty, while our mind is full of stimulating experiences, all increasing our eagerness to take to the field again.

So the hunter of birds with opera glass and camera finds an even deeper pleasure in his excursions into their haunts and study of their ways; a pleasure which no accounting of the value of birds to the State can ignore.

In view of the economic importance of birds to our agricultural interests it

may now well be asked what is the attitude of the State toward creatures whose welfare is so closely connected with that of its citizens? Does it take proper measures to protect them? Does it urge the employment of methods designed to aid in their increase?

It is true that the State formally recognizes the value of its assets in bird-life by the passage of laws intended to give birds legal protection, but no adequate means are provided for their enforcement. Where one person is prevented from killing a bird a thousand commit murder unchecked; nor can this evil be remedied without a material increase in the force of game wardens. The latter, as their official title implies, are appointed chiefly to enforce the laws relating to game while the laws concerning the far more numerous, and economically more valuable, non-game birds are generally dead letters.

So-called sportsmen shoot these birds in pure wantonness, pot-hunters slaughter them for market, foreigners kill them for food, milliners' agents collect them to supply fashion's demands, boys find them a tempting mark for bean-shooters and air-guns; while birds' eggs are taken as the legitimate prize of nearly every child who finds a nest. To these unnatural and remediable causes for the destruction of our birds should be added the ravages of the so-called domesticated cat. There are probably not less than two million cats in the State of New York. While many of them are well-fed pets, the larger proportion are to a greater or less extent dependent on their own efforts, often preferably so, for food. A single cat has been known to catch sixty wild birds in a season, and a well-known naturalist and authority on the birds of New England estimates that at least 1,500,000 birds are killed annually by cats in the New England States.

It is unnecessary here to dwell on the decrease in bird-life following the clearing of forests, draining of land, accompanying the growth in our population, for this, in a measure, is unavoidable, it being my object only to show that so far as the State assumes an attitude towards the birds, that attitude is one of destruction.

It being demonstrated that, in the main, birds are of great value to the State it follows that the State should spare no effort to afford its citizens of the air the protection they deserve. How, then, may we most effectively prevent the great destruction of bird-life which occurs in this State? The most rational methods would appear to be: (1) Enforcement of the law; (2) licensing of cats and destruction of all non-licensed cats; (3) teaching children to realize the economic and æsthetic value of birds; (4) leaving hedge rows, undergrowth, and clumps of trees as resorts for birds. The laws of the State of New York relating to birds are so well drawn that their enforcement would give our non-game birds complete legal protection from their enemy man. But, as has been said, the present force of game wardens is far too small to afford our birds the protection which is their due. What is needed, however, is not an addition to the number of game wardens, but a new officer who shall be known as a *bird* warden, and whose especial duty shall be to enforce the laws designed to protect non-game birds. Such officer should not only prevent the illegal killing and trapping of birds, but should examine the stock of milliners and others who offer plumage for sale.

The growing interest in the study of nature and the establishment of nature study courses in our schools, in connection with the admirable campaign to teach the people the value of birds, inaugurated by the Audubon societies and the American Ornithologists' Union, has already created a sentiment in favor of bird protection without which the best of laws are practically ineffective.

Teachers have been quick to realize that the inherent, universal interest in bird-life can be made of great educational and moral value in the training of children. No force at the State's command could effectually prevent boys from robbing nests and killing birds. Nor should the boy be prevented by force from giving this wholly natural exhibition of traits inherited from savage ancestors. The remedy here is to be applied, not by the State's bird wardens or police, but by its teachers. A normal, healthy boy should want to hunt birds and their nests, but a very little of the right kind of instruction at this stage of his life will often so broaden his interests that he soon finds living birds more attractive than dead ones.

As for the destruction of birds by cats, there can be no doubt that it would be largely decreased by the passage of a law requiring the annual licensing of cats, and authorizing the proper authorities to kill all non-licensed cats. Such a law should be supported not only by the friends of birds, but by the friends of cats as well. By the former because the restriction of the cat population to the well-fed tabby of the fireside would not only greatly reduce the cat population, but would do away with its worst element, the cats who hunt for a living. It should be supported by the latter because its enforcement would put an end to the existence of the many starving felines of our cities whose happiest fate is sudden death.

If birds are of value, as we believe them to be, we should not only prevent their decrease, but we should take such measures as seem calculated to assist their increase. We have seen that in destroying our forests we deprive many insectivorous birds of their homes, while in clearing hedge rows we often rob seed-eating birds of the protection the undergrowth affords them. With comparatively little trouble we can add greatly to the attractions of our farms and gardens from the birds' point of view. Clumps of trees left in the fields and rows of trees along the hedge rows will prove paying investments, and wherever it does not seriously interfere with the tilling of the land the undergrowth should be spared. During the winter food in small quantities may be used to attract birds, and in the summer water for bathing or drinking is always welcomed by them. Wren and Bluebird and Martin houses should be erected in suitable positions with the hope of securing bird tenants, who will pay a most profitable rental.

Coot (*Fulica americana*)

Length: About 15 inches. The slate-colored plumage, with blackish head and neck, white bill, and scalloped toes mark this bird apart from all others.

Range: Breeds from southern Canada south to Lower California, Texas, Tennessee and New Jersey; also in southern Mexico and Guatemala; winters from southern British Columbia, Nevada, Utah, Ohio Valley and Virginia south to Panama.

The coot, or mud-hen, is a sort of combination of duck, gallinule and rail, and withal is a very interesting bird. Fortunately for the coot, its flesh is little esteemed, and by many, indeed, is considered unfit for human consumption. The coot is thus passed by in contempt by most sportsmen, and in some regions it is as tame as can well be imagined, swimming within a few feet of the observer with entire unconcern. Under other circumstances, however, as in Louisiana, where it is shot for food under the name *poule d'eau*, it becomes as wild as the most wary of ducks. It frequents both salt and fresh water, preferably the latter. The mud-hen is one of the few American birds that occasionally visits the distant Hawaiian Islands in fall and winter. Finding conditions there to their liking, some of the immigrants, probably centuries ago, elected to remain and found a new colony, and there, in the fresh water ponds of the island archipelago, their descendants still live and thrive.

The food of the coot consists almost entirely of water plants of no use to man. There would seem, therefore, to be no excuse for killing or disturbing the bird in any way.

Autumn Beauties

By Miller Noel Long

Earth is putting on bright raiment
Ere the winter is begun;
All the leaves are glowing jewels
In the dazzling autumn sun.

All the ground is flecked with spangles, .
Saffron hue, or ruddy gold;
Wealth of myriad trees down-showered
Shows the year is growing old.

Overhead a sapphire curtain
In bright beauty is unfurled;
Clouds like misty, purple hilltops
Crown the edges of the world.

O the glowing, golden autumn!
All too short her splendid reign;
Hasten, then, ye other seasons—
Autumn, come to us again!

Birds of Town and Country

By Henry W. Henshaw

From very ancient times birds have appealed to the interest and imagination of mankind. They have furnished themes for innumerable poets, have appeared in many guises in primitive religions, and by their flight inspired the predictions of the soothsayers of old. In these modern and prosaic times birds still continue to interest mankind, and the last decade has witnessed a marked strengthening of the sentiment toward them.

The present interest is direct and personal, and today hundreds of thousands of men and women in various parts of the country, old as well as young, are employing much of their leisure in familiarizing themselves with the birds of their respective localities. In following birds afield, in studying their habits, and listening to their songs, they bring themselves into close touch and sympathy with nature and add new zest to life—a zest, be it noted, which enriches without harm to any creature.

Would that the same could be said of the sportsman who almost invariably is at heart a nature lover, though the primitive instinct to kill is uppermost. Many sportsmen, however, who formerly followed wild creatures only to kill, have abandoned the use of rifle and shotgun, and today are finding greater pleasure in studying and photographing their former quarry than they did in pursuing it with murderous intent. A real interest in living outdoor wild life leads naturally to a love of nature in all her varied manifestations, and this, in all lands and under all circumstances, remains a source of lasting pleasure.

A love of birds from the esthetic side, however, is of comparatively recent development and had little place among primitive peoples, who utilized birds chiefly in two ways—for food and for ornament. Feathers, especially, appealed to them for purposes of adornment, and this barbaric taste has not only survived among civilized races, but in recent years has developed to an extent which threatens the very existence of many of the most beautiful and notable species of birds in various parts of the world. No region is too remote, no forests too deep, no mountains too high to stay the plume-hunter, stimulated by the golden bribe offered by the tyrant Fashion.

Happily, America has taken the lead in an attempt to restrict this craze for feather adornment, which means nothing less than the death of millions of beautiful and useful creatures. Nor are evidences wanting that other countries as well have recognized the gravity of the situation and are preparing to pass protective laws similar to those recently enacted in this country.

BIRDS ARE THE FARMERS' MOST EFFICIENT ALLIES

While birds appeal to the regard and interest of man from the esthetic side as no other creatures do, there is another and even more important point of view, and it is no doubt true that of late years interest in birds has been greatly stimulated by the discovery that they possess an economic value. Indeed, so

great is their value from a practical standpoint as to lead to the belief that were it not for birds successful agriculture would be impossible.

The study of the economic side of bird life and of the relations of birds to the farmer and horticulturist have been greatly stimulated in the United States by Federal aid and supervision, and in no other country in the world have the activities of birds been so carefully investigated with reference to their practical bearing. Under the Biological Survey of the Department of Agriculture, for instance, is a corps of trained men, who study the food of birds by careful examination of the stomachs of specimens killed for scientific purposes. The information thus gained is supplemented by observations in the field, and the result is a large amount of invaluable data illustrative of the economic relations of many kinds of birds. This storehouse of information has been largely drawn upon in the following pages.

OUR COUNTRY IS PARTICULARLY FORTUNATE IN THE NUMBER AND VARIETY OF ITS BIRDS

It would be strange indeed if our land, with its vast extent of territory, its diversified landscape, its extensive forests, its numerous lakes and streams, with its mountains, prairies, and plains, had not been provided by Nature with an abundant and diversified bird life. As a matter of fact, America has been favored with a great variety of birds famed both for beauty and for song. America also possesses certain families, as the humming birds and wood-warblers, the like of which exist nowhere else in the world.

In considering the many kinds of birds in the United States from the practical side, they may not inaptly be compared to a police force, the chief duty of which is to restrain within bounds the hordes of insects that if unchecked would devour every green thing. To accomplish this task successfully, the members of the force must be variously equipped, as we find they are. Indeed, while the 1,200 kinds of birds that inhabit the United States can be grouped in families which resemble each other in a general way, yet among the members of the several families are marked variations of form and plumage and still greater variation of habits, which fit them for their diversified duties.

As the bulk of insects spend more or less time on the ground, so we find that more birds are fitted for terrestrial service than for any other. Our largest bird family, the sparrows, is chiefly terrestrial, and although its members depend much upon seeds for subsistence they spend no little share of their time searching for insects. They are ably aided in the good work by the thrushes, wrens, certain of the warblers, and many other birds.

Another group is of arboreal habits, and plays an important part in the conservation of our forests, the true value of which we have only recently learned to appreciate. So many insects burrow into trees that a highly specialized class of birds—the woodpeckers—has been developed to dig them out. The bills, tongues, feet, and even the tails of these birds have been cunningly adapted to this one end, and the manner in which this has been done shows how fertile Nature is in equipping her servants to do her bidding.

The bark of trees also forms a favorite shelter for numerous insects, and behold the wrens, nuthatches, warblers, and creepers, with sharpest of eyes and slenderest of bills, to detect our foes and to dislodge them from crack and cranny.

The air is full of flying insects, and to take care of these there are the swallows, swifts, and night-hawks, whose wings and bodies are so shaped as to endow them with the speed and agility necessary to follow all the turns and windings of their nimble insect prey.

The whippoorwills, swift of wing and with capacious mouths beset with bristles, attend to the night-flying insects when most birds are asleep, while the hawks by day and the owls by night supplement the work of other birds and have a special function of their own, the destruction of noxious rodents.

Thus every family of birds plays its own part in the warfare against insects and other foes to man's industry, and contributes its share to man's welfare.

Birds would fall far short of what they accomplish for man were they not the most active of living things. It is curious that the group of vertebrates which live the fastest—that is, have a higher temperature and a more rapid circulation than any other—should be related by descent to a family of such cold-blooded creatures as the reptiles and lizards, which often go without food and hibernate for considerable periods. Very different is it with birds. Few realize the enormous quantity of food required to sustain the energy of these creatures, most of whose waking hours are spent in a never-ending search for food.

In satisfying their own hunger birds perform an important service to man, for notwithstanding the fact that the acreage under cultivation in the United States is larger than ever before, and that the crops are greater, the cost of foodstuffs continually mounts upward. Meanwhile the destruction of farm and orchard crops by insects and by rodents amounts to many millions each year, and if any part of this loss can be prevented it will be so much clear gain.

The protection of insectivorous and rodent-destroying birds is one of the most effective means of preventing much of this unnecessary loss, and the public is rapidly awakening to the importance of this form of conservation. From the farmers' standpoint, such birds as the bobwhite, prairie-chicken, the upland plover, and the other shore birds are worth very much more as insect eaters than as food or as objects of pursuit by the sportsman. This statement applies with especial force to such species as the prairie-chicken, which everywhere in its old haunts is threatened with extinction.

The value of birds to the farmer is plain enough, but we do not usually think of birds as having any direct relation to the public health. To prove that they do, however, it is only necessary to state that 500 mosquitoes have been found in the stomach of a single night-hawk; that in a killdeer's stomach hundreds of the larvæ of the salt-marsh mosquito have been found, and that many shore birds greedily devour mosquito larvæ. As mosquitoes are known to carry the germs of such serious diseases as dengue fever and malaria, it is evident that by destroying them birds are conferring an important benefit on man. It may be added that not infrequently ticks are eaten by birds, and that the tick responsible for the spread of Texas fever among cattle has been found in the stomach of the bobwhite.

Since birds perform such invaluable service, every effort should be made to protect the birds we now have and to increase their numbers. This can be done in several ways: (a) by furnishing nesting boxes for certain species to nest in, as swallows, martins, wrens, woodpeckers, great-crested flycatchers, and others; (b) by planting berry-bearing shrubs about the farm or orchard as food for the birds in winter; (c) by the establishment of bird sanctuaries, where birds may be reasonably safe from their natural enemies and be permitted to live and breed in absolute security as far as man is concerned.

Here, again, the National Government, taking the lead, has set apart no less than 64 bird refuges in various parts of the United States. These for the most part are rocky, barren islands of little or no agricultural value, but of very great usefulness in the cause of bird protection. The example thus set is now being followed by certain States, as Oregon and Wisconsin. Several private citizens also have acquired islands for the purpose of making bird preserves of them; others not only prevent the destruction of wild life on their forested estates, but go much farther, and endeavor in various ways to increase the number of their bird tenants.

Spotted Sandpiper (*Actitis macularia*)

Length, about 6 inches. The "tip up," with its brownish gray upper parts and white under parts and its teetering motion, is too well known to need description.

Range: Breeds in northwestern Alaska and in much of northern Canada south to southern California, Arizona, southern Texas, southern Louisiana and northern South Carolina; winters from California, Louisiana and South Carolina to southern Brazil and Peru.

The little "tip up," as it is appropriately named, from its quaint nodding motion, unduly favors no one section or community but elects to dwell in every region suited to its needs from Alaska to Florida. It is doubtless more widely known than any other of our shore birds, and as it takes wing when disturbed, its "wit, wit" comes to us from beach, river side, and mill pond, from one end of the land to the other. It is the only shore bird that habitually nests in cornfields and pastures, and its handsome buff eggs spotted with chocolate are well known to the farmer's boy everywhere. Much is to be said in favor of the food habits of the little tip up, as the bird includes in its diet army worms, squash bugs, cabbage worms, grasshoppers, green flies and crayfishes. Having thus earned a right to be numbered among the farmers' friends, the bird should be exempt from persecution. The tiny morsel of flesh afforded by its plump little body, when the bird has been shot, is in no sense an adequate return for its services when alive and active in our behalf.

White-Winged Crossbill (*Loxia leucoptera*)

By Leander Keyser

Description: Male: Rosy-red or carmine all over, save for grayish of nape and black of scapulars, wings, and tail. The black of scapulars sometimes meets on lower back. Two conspicuous white wing-bars are formed by the tips of the middle and greater coverts. Bill slenderer and weaker than in preceding species. Female and young: Light olive-yellow, ochraceous, or even pale orange over gray, clearer on rump, duller on throat and belly; most of the feathers with dusky centers, finer on crown and throat, broader on back and breast; wings and tail as in male, but fuscous rather than black; feather-edgings olivaceous. Very variable. Length, 6.00-6.50 (152.4-165.1); wing, 3.50 (88.9); tail, 2.25 (57.2); bill, .67 (17.).

Recognition Marks: Sparrow size; crossed bill; conspicuous white wing-bars of both sexes.

Nesting: Not known to breed in Ohio. "Nest, of twigs and strips of birch-bark, covered exteriorly with moss (*Usnea*) and lined with soft moss and hair, on the fork of an evergreen, in deep forests. Eggs, 3 (?), pale blue, spotted and streaked near larger end with reddish brown and lilac, .80 x .55 (20.3 x 14.)" (Chamberlain).

Range: Northern parts of North America, south into the United States in winter. Breeds from northern New England northward.

The habits of this lesser known species appear to be substantially the same as those of *L. c. minor*. Its summer range lies for the most part further north, although it also breeds in the mountains of the West. It is much less frequent in winter than the preceding species, although it occasionally appears in great numbers.

"In the spring of 1869, Mr. Jillson, of Hudson, Mass., sent me a pair of these birds which he had captured the preceding autumn. They were very tame, and exceedingly interesting little pets. Their movements in the cage were like those of caged Parrots in every respect, except that they were far more easy and rapid. They clung to the sides and upper wires of the cage with their feet, hung down from them and seemed to enjoy the practice of walking with their heads downward. They were in full song and both the male and the female were quite good singers. Their songs were irregular and varied, but sweet and musical. They ate almost every kind of food, but were especially eager for slices of raw apples. An occasional larch cone was also a great treat to them. Although while they lived they were continually bickering over their food, yet when the female was accidentally choked by a bit of eggshell, her mate was inconsolable, ceased to sing, refused his food, and died of grief in a very few days."



WHITE-WINGED CROSSBILL.
(*Loxia leucoptera*.)
About $\frac{2}{3}$ Life-size.

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Pacific Coast Jays

By. F. E. L. Beal

In California and adjacent States two species of jays are much in evidence under several more or less well-marked forms.

The Stellar jay much resembles the eastern bird, but it is more shy and retiring and seldom visits the orchard or vicinity of the ranch buildings. Stomach examination shows that its food does not radically differ from that of the eastern blue jay. As is the case with that bird, a very considerable part of the food consists of mast, together with a little fruit and some insects. The insects are largely wasps, with some beetles and grasshoppers. The jay also eats some grain, which is probably waste or volunteer. No complaints, so far as known, are made against this bird. Until it shall become less wary it is not likely to trespass to a serious extent upon the farmer's preserve.

The California jay, although of a different genus, more nearly resembles its eastern relative in food habits and actions. It freely visits the stockyards near ranch buildings, and orchards and gardens. As a fruit stealer it is notorious. One instance is recorded where seven jays were shot from a prune tree, one after the other, the dead bodies being left under the tree until all were killed. So eager were the birds to get the fruit that the report of the gun and the sight of their dead did not deter them from coming to the tree. In orchards, in canyons or on hillsides adjacent to chaparral or other great mischief is done by this bird. In one such case an orchard was under observation at a time when the prune crop was ripening, and jays in a continuous stream were seen to come down a small ravine to the orchard, prey upon the fruit, and return.

Fruit stealing, however, is only one of the sins of the California jay. That it robs hens' nests is universal testimony. A case is reported of a hen having a nest under a clump of bushes; every day a jay came to a tree a few rods away, and when it heard the cackle of the hen announcing a new egg it flew at once to the nest. At the same time the mistress of the house hastened to the spot to secure the prize, but in most cases the jay won the race. This is only one of many similar cases recounted. The jays have learned just what the cackle of the hen means. Another case more serious is that related by a man engaged in raising white leghorn fowls on a ranch several miles up a canyon. He stated that when the chicks were very young the jays attacked and killed them by a few blows of the beak and then pecked open the skull and ate out the brains. In spite of all efforts to protect the chicks and kill the jays the losses in this way were serious.

Examination of the stomachs of 326 California jays shows that 27 per cent of the contents for the year consists of animal matter and 73 per cent of vegetable. Although the great bulk of the animal food is made up of insects, the remains of eggshells and birds' bones appear much too often. The insect food is fairly well distributed among the more common orders, but grasshoppers are

slightly the most numerous and constitute 4.5 per cent of the year's food. In July, August, and September, however, the amount is 14, 18, and 19 per cent, respectively. Four per cent of the food consists of wasps, bees, etc., but in the three months named they constitute 15, 7, and 9 per cent, respectively. A worker honeybee found in each of two stomachs is rather surprising, for it is unusual to find a bird like the jay eating many of these active and elusive insects, which enter into the diet of the flycatchers. The remainder of the insect food is pretty evenly distributed among beetles, bugs, flies, and caterpillars. Eggshells were found in 21 stomachs and birds' bones in 5. Six stomachs contained the bones of mammals and two those of a lizard. No bird has a worse reputation for nest robbing than has the eastern jay, and yet of 530 stomachs of the eastern species only 6 contained eggshells or the bones of birds. This comparison serves to show what a marauder and nest thief the California jay really is.

In its vegetable diet this bird much resembles its eastern relative, the most remarkable difference being in the matter of fruit eating. With greater opportunities the California bird has developed a greater appetite for fruit and indulges it to the fullest extent. Remains of fruit were found in 220 of the 326 stomachs. The percentage for the year is only 16, but for the four months of June, July, August, and September it is 44, 33, 53, and 25, respectively. Cherries, apricots, and prunes are the favorites among cultivated fruits, and elderberries are relished to some extent. Grain, which was found in 48 stomachs, amounts to 6 per cent of the food of the year. Practically all of it was taken in the four months above mentioned, but it is not probable that much damage is done by the jay in this respect. The major portion of the grain was oats. What was not wild was probably simply scattered grain gleaned after the harvest. Mast is eaten by the California jay from September to March, inclusive, and constitutes during most of that period one of the principal elements of its food. In this respect the bird shows a remarkable similarity to the eastern species. A few weed seeds and other miscellaneous items make up the balance of the vegetable food.

In summing up from an economic point of view the character of the food of the California jay, it must be conceded that it is not all that could be wished. Its taste for birds' eggs and fruit is entirely too pronounced, and at present the species is superabundant in California. While the natural food supply of the bird has been lessened by bringing the woods and brushy canyons under cultivation, the same areas have been planted to fruit, and naturally the jay takes the fruit as an acceptable substitute. A considerable reduction of the bird's numbers would appear to be the only effective remedy.

Go to the Birds, Thou Sluggard

By Alexander Pope

If the scriptural injunction, "go to the ant, thou sluggard," should be changed to, "go to the birds, thou sluggard," I think a much more desirable example of intelligent industry would be suggested for the sluggard to emulate. To be sure, an ant is never still, but to the casual observer he does not seem to accomplish much. Of course, the scientific observer knows what they actually accomplish, but the ordinary person is inclined to agree with Mark Twain in his conclusions about ants, which he arrived at after spending a great deal of time observing them when "he had much better have been doing something else." If I were going to suggest a model for the sluggard to emulate, I should suggest any one of our common birds after their young are hatched in the early summer. They are examples not only of tireless activity, but of intelligent work.

A pair of field-sparrows built their nest on my lawn this year, and when the grass was cut the first time, with a scythe, being too long for the lawn-mower, the man who cut it found this nest, and marked it with a twig, and very considerably left a tuft of grass about two feet in diameter around it. As the summer residents' cats had not yet arrived, these birds were able to raise their whole brood. These industrious little workers were busy from daylight until dark, dropping insects into the four gaping mouths, the male sharing the duties of providing food equally with the female. One of the parents would fly off a short distance, and returning with a tiny moth or fly, light on the twig and then pop down into the nest, reappear immediately to allow its mate to contribute what she had gathered and start off again after more insects. As all the mouths of the hungry little brood were opened to their fullest extent on the arrival of one of the old birds, it must require something like memory for the parents to decide which mouth was next in turn to be fed.

Robins are another instance of unselfish devotion and tireless activity. All day long they are on my lawn, hopping three or four feet, stopping a few seconds, cocking their heads on one side to look for a worm that has incautiously allowed its head or its tail, whichever it is, to protrude slightly above the ground, and having seen one they seize and pull and tug until it is brought out entirely whole. When I used to go fishing and dug worms for bait, I found the greatest difficulty in getting a worm out whole, although half its length might be exposed, but a robin can pull and tug and he never breaks it. How fortunate it is that human beings don't require as much animal food in proportion as the robins! During this high cost of living it would be quite a strain on the head of a large family to provide them with half a ton of beef, more or less, every day.

Another industrious and indefatigable little worker for the sluggard to copy as far as activity goes, but in no other way, is the English sparrow. He is certainly unpopular and deservedly so, but there is no denying his capacity for work or his indomitable perseverance. He is not an artistic builder or a desirable neighbor, like his cousins, the field, vesper, chipping and song-sparrows, but he is no less a

worker. He builds a very unsightly nest, much larger than seems to be necessary, and if, after completion, it is torn down, he starts right in again to rebuild, and if destroyed a second or even a third time, he persistently keeps at work until he finally conceives the idea that he is not wanted in that particular place.

Of all the birds that I am acquainted with, the only one I happen to know that is absolutely devoid of all maternal affection is the cow bunting. This detestable birds neglect all family duty by laying its eggs, as everyone knows, in some smaller bird's nest, and when hatched by the motherly little one, it often crowds out the other legitimate occupants of the nest, and is carefully raised by its foster-mother. Its own mother, in the meantime, is having a good time in an adjoining pasture, following the cows, and gorging herself on crickets and other insects which the cows scare up as they graze. These birds not only neglect to feed and care for their young, but are too lazy to hunt for their own food, and allow the cows to do that for them. I once heard a noise near my house which I thought was made by a young robin, but investigation proved it to be a young cow bunting. It had evidently just left the nest, and was flapping its wings and crying for food, while a little chipping-sparrow, that had brought this thing into the world by sacrificing her own brood, was endeavoring to supply. My first instinct was to shoot the interloper, but on second thoughts I decided the little chippy was proud of her big baby, and it would be a disappointment to her to lose him. It seems as though a bunting, if it is going to play such a trick on some other bird, might at least select one of its own size. In advising the sluggard to emulate the birds, we must certainly make an exception of the cow bunting.

The Palm Warbler (*Dendroica palmarum*)

By W. Leon Dawson

Synonyms.—Red-poll Warbler; Yellow Red-poll Warbler (name now restricted to subspecies *D. p. hypochrysea*); Wagtail Warbler.

Description.—*Adults*: Crown chestnut; superciliary line yellow; extreme forehead dusky, divided by short yellow line; lores dusky; cheeks grayish, tinged or streaked with chestnut; upper tail-coverts yellow; remaining upper parts grayish brown, slightly tinged with olive; wings and tail dusky, with obscure grayish or greenish yellow edgings, the former without bars; subterminal white spots, usual to the genus, on two outer pairs of rectrices; chin, throat and crissum clear yellow; remaining under parts yellowish or dingy, more or less streaked, especially on sides, with dusky or pale rufous; a loose necklace of small dusky spots. *Adult in winter and immature*: Crown-patch much obscured by brownish; superciliary line whitish or buffy; below, dingy white or buffy with faint yellowish tinge; breast and sides obscurely streaked with dusky, and sides washed with brownish; crissum clear yellow; upper tail-coverts yellowish olive-brown. Length 4.50-5.50 (114.3-



PALM WARBLER.
(*Dendroica palmarum*).
Life-size.

139.7) ; av. of four Columbus specimens: wing 2.60 (66.) ; tail 1.98 (50.3) ; bill .40 (10.2).

Recognition Marks.—Medium size; chestnut crown distinctive in high plumage; yellow crissum in any plumage. Keep to fence-rows, hedges and wayside bushes; "bobs" nervously and wags tail.

Nesting.—Does not breed in Ohio. *Nest*, on the ground in tuft of grass, compactly built of grasses, bark and moss. *Eggs*, 4, creamy white, spotted and blotched with purple, lilac and reddish brown. Av. size, .70 x .52 (17.8 x 13.2) (Davie).

Range.—Northern interior to Great Slave Lake; in winter South Atlantic and Gulf States, the West Indies and Mexico. Of rare but regular occurrence in the Atlantic States in migrations.

In the careful husbandry of nature this bird alone of the Wood-Warbler kind has been assigned to a station unmistakably humble. The Prairie Warbler, indeed, regularly frequents low bushes, but only the "Red-poll" takes freely to the ground as well. It was there that he learned from the Water Thrushes that quaint habit of tilting the body and shaking or "jetting" the tail, as though protective harmony of coloration must be atoned for by some conspicuous and incessant motion, lest the bird be stepped on unawares. Although it feeds much upon the ground, especially in its winter home in the southern states, where it hops about after the fashion of a Titlark or even patters along the dusty roadside, its favorite resorts during migrations are wayside coppices, neglected fence-rows, and the undergrowth of damp woods. In such places it is to be found in April, flitting from bush to bush or searching quietly among the weeds. It usually lingers well into May and appears again, but less frequently, rather late in the fall. The bird is somewhat variable in appearance and often quite puzzling at some distance. Now a casual glance notes it for a sparrow, and again it challenges attention as some mysterious unknown. If only one catches the nervous flirt of the tail the case is out of chancery.

Several writers on birds pour contempt on the Palm Warbler's song and many profess ignorance of it altogether. It is not a very elaborate affair, but I have heard it delivered with a sprightliness and energy which called me half way across a pasture. One bird in particular lured me to the edge of a wood lot with a spirited rollicking chatter which made me suspect Junco in an ecstasy. Its ordinary song consists of a succession of twinned notes in a swell. On this point Lynds Jones says, "Each syllable should be given a half double utterance except at the middle of the swell, where the greater effort seems to coalesce the half double quality into one distinct syllable." At other times I have noticed a mere sustained sibilation, *wissa, wissa, wissa, wissa wissa*, without inflectional change. Besides this he has the inevitable Dendroican *chip*, but it is scarcely distinctive enough to be recognizable when a dozen other species are flying.

What Bird Life Means to Us

By El Comancho

Bird life, meaning the common wild birds with which every country boy is familiar, from the old black crow to the meadow-lark, blackbird, bobolink, and all the rest of the song-birds, is of much more value each year to the people of the United States than the biggest railroad system in the country. That may seem to be a pretty broad statement, yet it falls far short of stating the actual facts.

The agricultural department of the United States Government has kept tab on the birds, what they do, what they eat every day in the year, and what their habits are, until now their lives are an open book. This work, done by the biological survey, has brought out some very astonishing things besides natural history, for it has been so thoroughly and so painstakingly done that not only is the list of foods for each bird for the entire year accurately tabulated, but the average bulk amount of each kind of food is known so closely that values in dollars and cents can be reckoned, and thus the actual live value to the nation of each individual bird be easily computed.

For forty years I have made it a part of my daily life to watch and to study all nature, and especially to study our common song-birds. This has given me a great volume of accurate information so that I have for years had a very good working idea of the value of birds as insect and weed seed destroyers.

It remained for the biological survey, however, to get these things down to scientific accuracy because, where I was only one man, they put hundreds of observers into the field and thus were able to carry on a system of espionage that covered every State in the Union simultaneously. In addition to this they were able to bring in expert scientific observers and laboratory men whose life business is the study of bugs, good, bad and indifferent. This system was organized and the laboratory men began to examine the crops of birds sent in by hunters from all over the country.

Immediately things began to happen; certain insects were found (in whole specimens and fragments) in the crops of many birds; certain other insects were found only in the crops of certain birds. Some crops contained only weed seeds of one kind or another; others contained a great mixture of seeds of various weeds, and many others contained both weeds and bugs.

The strangest thing developed by this work was that robins and certain other birds, long accused of being fruit eaters and, therefore, detrimental to mankind, were absolutely cleared of the charge because their diet is almost entirely insects with only here and there a cherry! Every robin is entitled to the few cherries he eats because without him there would be no cherries for anybody, for he destroys the insects that destroy cherries and when he is in the cherry-tree he is eating more insects than cherries.

Many other supposed-to-be-harmful birds were found to be just as helpful, and there is no guesswork about it now!

The common Bob-white quail, killed all over the country for sport, is worth each year considerably more than his own weight in pure gold because he destroys harmful insects (like the potato-bug, chinch-bug, and others) enough to save more than the value of his own weight in gold in crops for the farmer. Remember that each and every quail is worth that for bug-destroying alone, to say nothing of the weed seeds he destroys on top of that, so the farmer with a flock of quails on his land should protect them because in doing so he is saving money for himself and the crop supply for all.

If it were not for the common forked-tail swallow we could not raise a cotton crop in the United States, simply because the food of the swallow in its migrations over the cotton belt is the cotton boll weevil, and the bird eats the insect in the moth or egg laying stage, so he strikes at the weevil in his weakest spot.

There is not one single wild bird of any species (not even excepting hawks and owls long killed on sight by everybody), but what is of very great value to man, and every man, woman and child should protect every bird because it means a tremendous crop increase to us all.

Black-Crowned Night Heron (*Nycticorax naevius naevius*)

Length, about 24 inches. The black crown distinguishes it from its relative, the yellow-crowned night heron.

Range.—Breeds from northern Oregon, southern Wyoming, southern Manitoba, and central Quebec south to Patagonia; winters from northern California and Gulf States southward.

Given for a roosting place a suitable stand of leafy trees, especially evergreens, conveniently near a stream or pond that harbors fish, frogs and tadpoles, and any locality may have its colony of night herons. As its name implies, this heron is a bird of the night, not leaving its roost till dusk, when, with frequent iteration of its hoarse quawk, it wings its way in the gathering gloom straight to its feeding place. So rarely is the bird about in daylight that a large colony may exist for years near a town or large city, and not above a dozen individuals have an inkling of its existence. True to its sociable instincts, the night heron by preference nests in colonies, and several pairs often place their rude nests of sticks in the same tree; or, in the absence of trees, as in the extensive tule swamps of the far west, where other conditions are ideal for herons, they nest on the ground or on the prostrate tules, hundreds of pairs being associated together.

This heron sometimes feeds on field mice, but it eats too many fish to please the fishculturist, and after it has once learned the way to a hatchery strong measures are needed to discourage its activities.

The Gambel's Quail (*Lophortyx gambeli*)

By Sylvester D. Judd

Length: Ten inches.

Range: Desert region of southern California, southern Nevada, Arizona, and southwestern Utah, east to the southwestern corner of Colorado; also in southwestern New Mexico to the Rio Grande Valley and the El Paso region of extreme western Texas, and south into the northeastern corner of Lower California and to Guaymas, Sonora.

Though differing markedly in coloration from the valley quail of the Pacific coast, Gambel's quail so closely resembles that bird in size and general habits that in my mind the two are inseparable. That the quail themselves are sometimes misled by the likeness would appear from the fact that the two readily hybridize, and I have seen a number of the hybrids from southeastern California. This quail prefers canon bottoms and rocky hillsides for hunting grounds, and the speed with which the individuals of a frightened covey can make good their escape among rocks and bushes is surprising. Gambel's quail trusts for safety first to its legs and only secondly to its wings, while it is rare indeed that it resorts to Bob-white's favorite ruse of close hiding. Ordinarily in fall it associates in large bands—they can scarcely be called coveys, since they are the aggregate of many coveys—and under these circumstances the pot hunter who cannot slay his scores must indeed be a bungler. Gambel's quail is no stranger in vineyard and garden, although for the most part it frequents scantily inhabited districts. In one respect both Gambel's and the California valley quail have greatly the advantage over Bob-white since, if these two western species ever roosted on the ground, they long ago abandoned the habit in favor of trees and thick undergrowth, where they are safe from most prowlers of the darkness.

The Gambel quail in general appearance is much like the valley quail, but, among other differences, lacks the scalelike feathers of the lower parts and has considerable chestnut along the flanks. It lives in the Lower Sonoran zone, from western Texas to southeastern California and from southern Utah and Nevada south through central Sonora, Mexico. The desert is its home, but it is rarely found far from water. Its favorite haunts are patches of bushy vegetation, such as mesquite, mimosa, creosote, and patches of prickly pear. It frequently takes up its abode about cultivated land, living in alfalfa fields or nesting in vineyards.

An interesting account of the habits of the Gambel quail in the Pahrump Valley, Nevada, is given by E. W. Nelson:

"I noticed that when a flock of quail came to feed on grain left by the horses an old male usually mounted the top of a tall bush close by and remained on guard for ten or fifteen minutes; then, if everything was quiet, he would fly down among his companions. At the first alarm the flock would take to the bushes, running swiftly, or flying when hard pressed. They roosted in the dense bunches of willows and cottonwoods growing along the ditches. * * * When feeding they have a series of low clucking and cooing notes which are kept up almost continually."



The love note, according to Cones, may be represented in words as "killink, killink." Nesting takes place in April, sometimes not till May. About a dozen eggs usually constitute a clutch. In sections where this quail is still numerous the birds *pack* in bands of from 100 to 500 after the breeding season.

From the sportsman's point of view the Gambel quail as a game bird does not approach the Bob-white. It will sometimes lie to a dog fairly well, but as a rule it takes to its legs with all haste and leaves the dog on point, to the vexation of the hunter. It is, however, a useful species, which brightens the desert with its presence and contributes a welcome addition to the fare of the traveler. While less valuable than the Bob-white as a destroyer of noxious insects and as an object of sport, this bird well deserves protection for its food value and its beauty. It thrives under desert conditions and might be successfully introduced in the arid regions of Colorado, New Mexico and Texas.

Stomachs of 28 birds collected mainly in Arizona and Utah, from January to June, have been examined. Only 0.48 per cent of the food consisted of insects: the remaining 99.52 per cent was vegetable matter. Like the valley quail, this is one of our least insectivorous birds. Its insect diet includes ants, beetles, grasshoppers, leaf hoppers (*Membracida*), and stink bugs (*Pentatomida*). Among the beetles are the western twelve-spotted cucumber beetle (*Diabrotica soror*) and *D. tenella*. The young chicks, however, will doubtless be found highly insectivorous and therefore useful.

The male bird does not pair like the partridge, and his polygamous nature gets him into many a fight with others of his own sex. The color plate is a true picture, showing his stout body, small round head.

Harlequin Duck (*Histrionicus histrionicus*)

Range.—Breeds from Kowak and Yukon rivers, Alaska, Arctic coast, and Greenland south to southwestern British Columbia, central Mackenzie, northern Ungava, and Newfoundland, south in mountains to central California, southwestern Colorado, northeastern Asia and Iceland; winters on Pacific coast from Aleutian Islands to Monterey, California, in interior to Colorado, Missouri, Lake Michigan, and western New York, and on the Atlantic coast from Gulf of St. Lawrence regularly to Maine.

The name "harlequin" suggests the unusual and somewhat bizarre plumage of this duck which, nevertheless, deserves to be classed among our most beautiful waterfowl. Rare everywhere in the United States except along our northwest coast, the harlequin breeds commonly in Alaska and uncommonly in the States from Colorado and California northward. Unlike most other ducks, the harlequin disdains to nest in the lowlands, but in summer withdraws itself from its kind and hies to the mountain solitudes where it dwells on the swift alpine streams, its only companion the water ouzel. In fall it resorts to the coast and assembles in small bands with flocks of other species, among which the male harlequins are rendered conspicuous by their striking markings.

Birds Common to Field and Orchard

By Henry W. Henshaw

This article is intended to serve the very practical purpose of enabling our farmers and their boys and girls to identify the birds that frequent the farm and orchard. The material prosperity of State and Nation depends largely on agriculture, and any agent that serves to increase the size of crops and insure their certainty is of direct interest and importance to the farmer. Birds constitute one of the most valuable of these agents, since they depend largely for their food on insects which are among the farmer's most dreaded foes.

Entomologists have estimated that insects yearly cause a loss of upwards of \$700,000,000 to the agricultural interests of the United States. Were it not for our birds the loss would be very much greater, and indeed it is believed that without the aid of our feathered friends successful agriculture would be impossible. A knowledge of the birds that protect his crops is, therefore, as important to the farmer as a knowledge of the insect pests that destroy them. Such knowledge is the more important because the relation of birds to man's interests is extremely complex. Thus, while it may be said that most of our birds are useful, there are only a few of them that are always and everywhere useful and that never do harm. Insectivorous birds, for instance, destroy, along with a vast number of harmful insects, some parasitic and predatory kinds. These latter are among Nature's most effective agents for keeping destructive insects in check. To the extent, then, that birds destroy useful parasitic insects, they are harmful. But, taking the year round, the good they do by the destruction of insects injurious to man's interests far outweigh the little harm they do. It may be said, too, that of the birds usually classed as noxious there are very few that do not possess redeeming traits. Thus the crow is mischievous in spring and sorely taxes the farmer's patience and ingenuity to prevent him from pulling up the newly planted corn. Moreover, the crow destroys the eggs and young of useful insectivorous and game birds; but, on the other hand, he eats many insects, especially white grubs and cutworms, and destroys many meadow mice, so that in much (although not all) of the region he inhabits the crow must be considered to be more useful than harmful. Most of the hawks and owls even—birds that have received so bad a name that the farmer's boy and the sportsman are ever on the alert to kill them—are very useful because they destroy vast numbers of insects and harmful rodents.

Birds occupy a unique position among the enemies of insects, since their powers of flight enable them at short notice to gather at points where there are abnormal insect outbreaks. An unusual abundance of grasshoppers, for instance, in a given locality soon attracts the birds from a wide area, and as a rule their visits cease only when there are no grasshoppers left. So also a marked increase in the number of small rodents in a given neighborhood speedily attracts the attention of hawks and owls, which, by reason of their voracious appetites, soon produce a marked diminution of the swarming foe.

America is greatly favored in the number and character of its birds, which not only include some of the gems of the bird world, as the warblers and humming birds, but on the whole embrace few destructive species. Not only do many birds satisfy our esthetic sense through their beautiful plumage and their sweet voices, but they are marvelously adapted to their respective fields of activity. No other creatures are so well fitted to capture flying insects as swallows, swifts and nighthawks. Among the avian ranks also are wrens, trim of body and agile of movement, that creep in and out of holes and crevices and explore rubbish heaps for hidden insects. The woodpecker, whose whole body exhibits wonderful adaptation of means to end, is provided with strong claws for holding firmly when at work, a chisel-like bill driven by powerful muscles to dig out insects and a long extensible tongue to still further explore the hidden retreats of insects and drag forth the concealed larvæ, safe from other foes. The creepers, titmice, warblers, flycatchers, quails, doves, and other families have each their own special field of activity. However unlike they may be in appearance, structure, and habits, all are similar in one respect—they possess a never flagging appetite for insects and weed seeds.

One of the most useful groups of native birds is the sparrow family. While some of the tribe wear gay suits of many hues, most of the sparrows are clad in modest brown tints, and as they spend much of the time in grass and weeds are commonly overlooked. Unobtrusive as they are, they lay the farmer under a heavy debt of gratitude by their food habits, since their chosen fare consists largely of the seeds of weeds. Selecting a typical member of the group, the tree sparrow, for instance, one-fourth ounce of weed seed per day is a conservative estimate of the food of an adult. On this basis, in a large agricultural state like Iowa tree sparrows annually eat approximately 875 tons of weed seeds. Only the farmer, upon whose shoulders falls the heavy burden of freeing his land of noxious weeds, can realize what this vast consumption of weed seeds means in the saving and cost of labor. Some idea of the money value of this group of birds to the country may be gained from the statement that the total value of the farm products in the United States in 1910 reached the amazing sum of \$8,926,000,000. If we estimate that the total consumption of weed seed by the combined members of the sparrow family resulted in a saving of only 1 per cent of the crops—not a violent assumption—the sum saved to farmers by these birds in 1910 was \$89,260,000.

The current idea in relation to hawks and owls is erroneous. These birds are generally classed as thieves and robbers, whereas a large majority of them are the farmers' friends and spend the greater part of their long lives in pursuit of injurious insects and rodents. The hawks work by day, the owls chiefly by night, so that the useful activities of the two classes are continued practically throughout the 24 hours. As many as 100 grasshoppers have been found in the stomach of a Swainson's hawk, representing a single meal; and in the retreat of a pair of barn owls have been found more than 3,000 skulls, 97 per cent of which were of mammals, the bulk consisting of field mice, house mice, and common rats. Nearly half a bushel of the remains of pocket gophers—animals which are

very destructive in certain parts of the United States—was found near a nest of this species. The notable increase of noxious rodents during the last few years in certain parts of the United States and the consequent damage to crops are due in no small part to the diminished number of birds of prey, which formerly destroyed them and aided in keeping down their numbers. A few hawks are injurious, and the bulk of the depredations on birds and chickens chargeable against haws is committed by three species—the Cooper's hawk, the sharp-shinned hawk and the goshawk. The farmer's boy should learn to know these daring robbers by sight, so as to kill them whenever possible.

From the foregoing it will at once appear that the practice of offering bounties indiscriminately for the heads of hawks and owls, as has been done by some states, is a serious mistake, the result being not only a waste of public funds but the destruction of valuable birds which can be replaced, if at all, only after the lapse of years.

As a rule birds do not live very long, but they live fast. They breathe rapidly and have a higher temperature and a more rapid circulation than other vertebrates. This is a fortunate circumstance, since to generate the requisite force to sustain their active bodies a large quantity of food is necessary, and as a matter of fact birds have to devote most of their waking hours to obtaining insects, seeds, berries and other kinds of food. The activity of birds in the pursuit of insects is still further stimulated by the fact that the young of most species, even those which are by no means strictly insectivorous, require great quantities of animal food in the early weeks of existence, so that during the summer months—the flood time of insect life—birds are compelled to redouble their attacks on our insect foes to satisfy the wants of their clamorous young.

Field observations of the food habits of birds serve a useful purpose, but they are rarely accurate enough to be fully reliable. The presence of certain birds in a corn or wheat field or in an orchard is by no means proof, as is too often assumed, that they are devastating the grain or fruit. They may have been attracted by insects which, unknown to the farmer or orchardist, are fast ruining his crop. Hence it has been found necessary to examine the stomachs and crops of birds to ascertain definitely what and how much they eat. The Biological Survey has in this way examined upward of 50,000 birds, most of which have been obtained during the last 25 years from scientific collectors, for our birds are too useful to be sacrificed when it can possibly be avoided, even for the sake of obtaining data upon which to base legislation for their protection.

It is interesting to observe that hungry birds—and birds are hungry most of the time—are not content to fill their stomachs with insects or seeds, but after the stomach is stuffed until it will hold no more continue to eat till the crop or gullet also is crammed. It is often the case that when the stomach is opened and the contents piled up the pile is two or three times as large as the stomach was when filled. Birds may truly be said to have healthy appetites. To show the astonishing capacity of birds' stomachs and to reveal the extent to which man is indebted to birds for the destruction of noxious insects, the following facts are

given as learned by stomach examinations made by assistants of the Biological Survey:

A tree swallow's stomach was found to contain 40 entire chinch bugs and fragments of many others, besides 10 other species of insects. A bank swallow in Texas devoured 68 cotton-boll weevils, one of the worst insect pests that ever invaded the United States; and 35 cliff swallows had taken an average of 18 boll weevils each. Two stomachs of pine siskins from Haywards, Cal., contained 1,900 black olive scales and 300 plant lice. A killdeer's stomach taken in November in Texas contained over 300 mosquito larvæ. A flicker's stomach held 28 white grubs. A nighthawk's stomach collected in Kentucky contained 34 May beetles, the adult form of white grubs. Another nighthawk from New York had eaten 24 clover-leaf weevils and 375 ants. Still another nighthawk had eaten 340 grasshoppers, 52 bugs, 3 beetles, 2 wasps and a spider. A boat-tailed grackle from Texas had eaten at one meal about 100 cotton bollworms, besides a few other insects. A ring-necked pheasant's crop from Washington contained 8,000 seeds of chickweed and a dandelion head. More than 72,000 seeds have been found in a single duck stomach taken in Louisiana in February.

A knowledge of his bird friends and enemies, therefore, is doubly important to the farmer and orchardist in order that he may protect the kinds that earn protection by their services and may drive away or destroy the others. At the present time many kinds of useful birds need direct intervention in their behalf as never before. The encroachments of civilization on timbered tracts and the methods of modern intensive cultivation by destroying or restricting breeding grounds of birds tend to diminish their ranks. The number of insect pests, on the other hand, is all the time increasing by leaps and bounds through importations from abroad and by migration from adjoining territories. Every effort, therefore, should be made to augment the numbers of our useful birds by protecting them from their enemies, by providing nesting facilities, and by furnishing them food in times of stress, especially in winter.

Important in this connection is the planting near the house and even in out-of-the-way places on the farm of various berry-bearing shrubs, many of which are ornamental, which will supply food when snow is on the ground. Other species which are not berry eaters, like the woodpeckers, nuthatches, creepers, and chickadees, can be made winter residents of many farms, even in the North, by putting out at convenient places a supply of suet, of which they and many other birds are very fond, even in summer. Hedges and thickets about the farm are important to furnish nesting sites and shelter both from the elements and from the numerous enemies of birds.

Few are aware of the difficulty often experienced by birds in obtaining water for drinking and bathing, and a constant supply of water near the farmhouse will materially aid in attracting birds to the neighborhood and in keeping them there, at least till the time of migration. Shallow trays of wood or metal admirably serve the purpose, especially as birds delight to bathe in them.

Considerable success has been met with in Germany and elsewhere in

Europe by supplying artificial nest boxes for birds, and the same method of increasing the number of birds and attracting them to farms and orchards where their services are most needed should be extensively employed in this country. The experiment can the more easily be tried, since several firms in the United States are now prepared to make and deliver boxes specially designed for martins, swallows, bluebirds, wrens, woodpeckers and other species. The average farmer's boy, however, if provided with a few tools, is quite equal to the task of making acceptable boxes for the commoner species, which are far from fastidious as to the appearance of the box intended for their occupancy.

One of the worst foes of our native birds is the house cat, and probably none of our native wild animals destroys as many birds on the farm, particularly fledglings, as cats. The household pet is by no means blameless in this respect, for the bird-hunting instinct is strong even in the well-fed tabby; but much of the loss of our feathered life is attributed to the half-starved stray, which in summer is as much at home in the groves and fields as the birds themselves. Forced to forage for their own livelihood, these animals, which are almost as wild as the ancestral wildcat, inflict an appalling loss on our feathered allies, and even on the smaller game birds like the woodcock and bobwhite. If cats are to find place in the farmer's household, every effort should be made by carefully feeding and watching them to insure the safety of the birds. The cat without a home should be mercifully put out of the way.

The American Goshawk (*Astur atricapillus*)

By W. Leon Dawson

Synonym.—Blue Hen Hawk.

Description.—*Adult*: Above slate-gray with darker shaft-lines; darker, almost black on head; white lines over and behind eye loosely connected by ill-concealed basal white of cervical feathers; auriculars blackish; tail with four dusky bands, plain, or almost obsolete; inner webs of wing-quills mottled—dusky and whitish; entire under parts white, finely and heavily marbled with slaty gray, in fine wavy or zigzag lines, falling into fine bars on flanks and tibiae, with blackish shaft-lines on throat and breast; iris light yellow; bill dark blue; feet yellow, claws black. *Immature*: Following the usual *Accipiter* fashion; above dark brown, spotted with buff and whitish and margined with rusty; tail with narrow white tip and four distinct dusky bands; below whitish or buffy, *striped* narrowly with dark brown—the markings guttate on belly, broader on sides and flanks. Adult male length about 22.00 (558.8); wing 12.00-13.50 (304.8-342.9); tail 9.50-10.50 (241.3-266.7); bill from nostril .75 (19.1). Adult female length about 24.00 (609.6); wing 13.25-14.25 (336.6-632.); tail 11.00-12.50 (279.4-217.5).

Recognition Marks.—Crow to Brant size; adult slaty blue above, white



AMERICAN GOSHAWK.
(*Accipiter atricapillus*).
 $\frac{1}{2}$ Life-size.

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mottled with slaty gray below; rather short, rounded wings; white line over eye distinctive.

Nesting.—Not known to breed in Ohio. *Nest*, high in trees, usually coniferous, of sticks, twigs, and grass, lined with bark-strips and grass. *Eggs*, 2-5. "white or glaucous white, sometimes very faintly marked with pale brownish." Av. size, 2.32 x 1.79 (58.9 x 45.5).

Range.—Northern and eastern North America, south in winter to the Middle States and southern Rocky Mountain region; casually west to Oregon. Accidental in England. Breeding range restricted to the Canadian Fauna of the United States and northward.

This intrepid marauder of the north is not seen within the limits of our state often enough to be clearly distinguished from its resident ally, the Cooper Hawk. It is somewhat larger, with short, rounded wings, and a tail superlatively long. Its wings are moved very rapidly in flight, and it is usually wary and restless, though not unapproachable. The bird is even more venturesome than the Cooper Hawk, and appears at times among the poultry with the quickness of a meteor, carrying off the choicest of the flock before the farmer's face and eyes. There is seldom anyone to call him to account, and during the migrations at least, the "Blue Hawk" has less conscience than a pirate. In former days, when the Ruffed Grouse was more abundant, his tireless pursuit of this valuable game bird earned him the name of Partridge Hawk, while in his native wilds in the far north he still feasts upon Grouse and Ptarmigan, and is ready for anything up to the size of a goose.

On the 13th of March, 1901, I saw a gunner on the O. S. U. grounds drop one of these birds from the top of an elm tree into the waters of the Olentangy, where it was left to shift for itself. Not suspecting the value of the kill I made a long detour and crossed the river in order to put the hawk out of its misery. Although severely wounded, the bird, once rescued from the drift, made a spirited fight, and was not despatched until its beautiful plumage was quite ruined. A year later, within a day, another Goshawk was narrowly observed with binoculars in the same bottom.

The Ash-Throated Flycatcher (*Myiarchus cinerascens*)

By Gerard Alan Abbott

Length: About 8 inches.

The Ash-throated Flycatcher is very similar to our crested flycatcher of the eastern United States, so a single plate of the study will suffice for both. The range of the ash-throated is west of the Rocky Mountains, where they are comparatively common in Utah, Colorado, Nevada and Oregon. A shy bird of retiring habits, it prefers the solitude of deep, shady forests where the insect food of this useful bird abounds. It is usually sole possessor of the tree in which its nest is built. Like the kingbird, this beautiful flycatcher is pugnacious, attacking all feathered intruders when they appear near the old cavity containing the nest.

Old hollows, formerly used by squirrels or woodpeckers, are favorite nesting sites. The eggs, like those of the crested flycatcher, are handsome and peculiar in markings. Four to five creamy eggs marked with purple streaks are laid, usually in June.

For the determination of the character of this bird's food only 91 stomachs were available, taken in the months from April to December, inclusive. So few, spread over so long a time, can give only a tentative idea of the food. In the first analysis the food divides itself into 92.32 per cent of animal matter to 7.68 of vegetable. Of the animal portion all but a few spiders is made up of insects, strictly speaking. Some fruits and seeds compose the vegetable part.

Animal food.—The Ash-Throat is one of the lesser beetle eaters among the flycatchers. Beetles aggregate only 7.26 per cent of the food, and of these 2.15 per cent can be considered as of useful species. These last consist of predaceous ground beetles (*Carabidae*), found in 3 stomachs, and a ladybird (*Coccinellidae*) in 1. The bird evidently does not hunt for these insects, or it would find more of them. Other beetles belonging to 7 different families were found in 60 stomachs, or two-thirds of the whole number. This raises the question as to the criterion for the palatableness of any article of food—the frequency with which the bird takes it or the amount eaten. Hymenoptera amount to 26.94 per cent and are the largest item of animal food. Wild bees and wasps make up the bulk of this item, with a few of the parasitic species. No honeybees were found. That Hymenoptera are a favorite food is shown by the quantity eaten and by the facts that they were found in 55 stomachs and that they were well distributed over the season.

Hemiptera (bugs) amount to 20.11 per cent, which is the highest record for this item among the flycatchers now considered. Among them were many of those queer beechnut-shaped little bugs commonly known as buffalo tree hoppers (*Membracidae*). These creatures are as agile as fleas, and would seem to be too nimble to be taken by most species of birds, but the ash-throat is evidently very successful in catching them, as they were found in 23 stomachs, while the sluggish stink-bugs (*Pentatomidae*) were in only 13. Cicadas were found in 13 stomachs, jumping plant lice (*Psyllidae*) in 7, leaf hoppers (*Jassidae*) in 7, shield bugs (*Scutelleridae*) in 1, assassin bugs (*Reduviidae*) in 1, and negro bugs (*Corimelaenidae*) in 1.



ASH-THROATED FLYCATCHER
½ Life-size.

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They were all taken in the five months from April to August, inclusive, and the average per month, if those five alone be considered, is 36.19 per cent.

Diptera (flies) amount to 12.83 per cent of the food, and were eaten in every month except August and September, but this exception is probably accidental. Those identified belong to the house-fly family (Muscidæ), the Syrphidæ (*Eristalis tenax*), and the robber flies (Asilidæ). These last were found in 2 stomachs only. Altogether Diptera were found in 24 stomachs. Lepidoptera (moths and their larvæ) were eaten in all the months but 3 (August, September, and October), but this is probably only accidental. A greater number of stomachs might show a regular consumption throughout the season. They amount to 17.11 per cent of the seasonal diet and were found in 29 stomachs. Of these, 22 contained caterpillars and 7 moths. No special pest was identified.

Orthoptera (grasshoppers and crickets) were eaten in the four months, April to July, and a few in December. The total is only 5.14 per cent, and the maximum, 18.07 per cent, occurs in July. Raphidians, dragon flies, and spiders together make 2.93 per cent, the balance of the animal food. The first-named are queer, long-necked, grotesque-looking creatures found in this country only in the far West. They are carnivorous in their habits and are said to prey upon the codling moth. In any event, they do not appear to be numerous in this country at present, and the only specimens the writer ever collected were in the stomachs of birds. The Ash-Throat appears to eat more of them than any bird yet examined, as they were found in 10 stomachs. One stomach contained 5, and in all there were 16 individuals. Dragon flies were found in 6 stomachs, about the usual proportion for a flycatcher, and spiders in 17, a rather large showing for such sedentary creatures.

Vegetable food.—The vegetable food of the Ash-Throat may all be summed up in two words, fruit and seeds. Elderberries (*Sambucus*) were found in 5 stomachs, cissus in 1, black nightshade (*Solanum*) in 1, fruit not identified in 2, and seeds unknown in 3.

In its animal food the Ash-Throat destroys a great number of harmful insects and a few beneficial ones, so that the balance is greatly in the bird's favor. Its vegetable food has no economic interest.

The Arkansas Kingbird (*Tyrannus verticalis*)

By F. E. L. Beal

Length: $7\frac{1}{2}$ inches.

The Arkansas kingbird inhabits the lower and warmer part of the state, mainly as a summer resident. It is not so domestic as its eastern relative, the common kingbird, and seems to prefer the hill country, with scattering oaks, rather than the orchard or the vicinity of towns or ranch buildings. Handsomer than the common kingbird.

For the investigation of the kingbird's food 78 stomachs were available. Most of them were taken from March to July inclusive, but a few in September, October and December. The bird's yearly food is made up of 87 per cent of animal matter and 13 per cent of vegetable.

Animal Food: The animal food is composed of insects and a few bones of a batrachian (tree frog or salamander). Both the eastern and western kingbirds have been accused of destroying honey bees (*Apis mellifica*) to a harmful extent. It is said that the birds linger about the hives and snap up the bees as they return home laden with honey. Remains of honey bees were searched for with special care, and were found to constitute 5 per cent of the food. Thirty-one individuals were discovered in 5 stomachs. Of these, 29 were drones, or males, and 2 were workers. In 3 stomachs containing males there was no other food, and when it is borne in mind that there are thousands of worker bees to one drone, it appears that the latter must be carefully selected. As a rule, the destruction of drones is not an injury to the colony, and often is a positive benefit. The food of the eastern kingbird shows practically the same ratio between drones and workers. Hymenoptera other than honey bees amount to 38 percent, and include wild bees, wasps, and ants, with a few parasitic species. The latter are very useful insects, and their destruction is an injury, but fortunately the kingbird is not especially fond of them.

The late Walter Bryant, of Santa Rosa, Cal., says:

Mr. A. Barnett, of San Diego County, had 300 swarms of bees, which attracted the flycatchers to such an extent that he made some investigations to ascertain to what extent they might be damaging the bee industry.

Over 100 flycatchers were dissected, principally Arkansas flycatchers and phoebes (Black and Say's?). In all of the Arkansas flycatchers drones were found, but no working bees, although in many cases the birds were gorged. In most of the phoebes drone bees were found; the only exception was that of a phoebe (Say's?) in which a bee's sting was found in the base of the tongue.

The birds were all shot about apiaries and were seen darting upon and catching the bees.

Such testimony is sufficient to clear these flycatchers of the suspicion that they interfere with the bee industry.

Beetles of various families form about 14 per cent of the food. They are all harmful species except a few predaceous ground beetles and ladybird beetles.



ARKANSAS KINGBIRD.
(*Tyrannus verticalis*).
 $\frac{3}{4}$ Life-size.

They were taken very regularly through the months, and appear to be a favorite food.

Orthoptera—grasshoppers and crickets—amount to 20 per cent. They were taken pretty regularly through all the months. Even the 3 stomachs secured in December show an average of 44 per cent. Probably few of these were caught on the wing, and their abundance in the food indicates that this bird, like many others, forsakes its usual style of feeding and goes to the ground to catch grasshoppers whenever they are numerous. Two stomachs were entirely filled with these insects, and in several others they amounted to over 90 per cent of the contents.

Miscellaneous insects, consisting of caterpillars and moths, a few bugs, flies, and a dragonfly, constituted 10 per cent. Several stomachs contained a number of moths, and one was entirely filled with them. Not many birds eat these insects extensively in the adult form, while the larvæ (caterpillars) are a prominent feature of the diet of most insectivorous birds. Besides insects, bones of some batrachian, probably a tree frog, were found in three stomachs and an eggshell in one. They amount to only a trifling percentage. Frogs or salamanders seem queer food for a flycatcher, but their bones have been found in the stomachs of several species of tree-haunting insectivorous birds.

Vegetable food.—The vegetable food of the Arkansas kingbird amounts to about 13 per cent, and consists mostly of fruit. It was all contained in 15 stomachs, of which 10 held elderberries (*Sambucus*) and 5 various small berries not positively identified. One also contained an olive, the only cultivated fruit found. A few seeds also were noted.

In a summary of the economic significance of the food of this kingbird it should be noted that the bird must be judged by its destruction of insects, for, since it does not eat any product of cultivation to an appreciable extent, its vegetable food can be disregarded. The offense of eating honey bees, so long laid at this bird's door, is practically disproved, for the more or less useless drones eaten far outnumber the useful workers. The injury the kingbird does, if any, is by eating predaceous beetles and parasitic Hymenoptera, but it takes these in such small numbers as to leave no reasonable doubt that the bird is one of our most useful species.

The Thaw

By O. Warren Smith

Spring is imminent. Somewhere the robins, blue birds, meadowlarks and song sparrows—spring makers—are advancing northward. What's that? How do I know? Have patience and I will explain.

Recently, while the snow lay almost four feet deep in the swamp, I received a "wireless" which set my heart a-bounding. Nothing more or less than a common sapsucker beating the long-roll to the South-Wind upon a resounding dead branch. How the hollow sound awakened the long silent echoes of the swamp, until the very air seemed to pulsate with the gladsome music. Yes, I call it just that—"music."

For two days of zero weather that bird drummed away with all the faith of your true optimist, until I felt like shouting encouragingly, "Keep it up and you will win out."

The swamp was calling me, but I waited. Upon the fourth day after I noticed the drumming, a slight change was discoverable, a certain indefinable intangible something had crept into the atmosphere. The sapsucker, half crazed with delight, beat the long-roll in double time until all the woodpeckers took up the refrain and my swamp fairly pulsated with the rolling, throbbing sound.

I am never tired of watching the transforming miracles of falling snow, over night accomplishing wonders beyond the power of pen to describe; but a warm south wind will change the face of nature in a few short hours, destroying fantastic snow-drifts and liberating ice-bound creeks. A few warm days and the snow settles rapidly. Listening, you can hear a low "seep, seep," the swan song of the snow. When the water begins to run in the sleigh tracks we know that winter is all but defeated.

Did you ever notice how restless the farmer's cattle become as soon as the spring thaw sets in in earnest? They are no longer satisfied to feed in the comfortable barn-yards, but must go out into the fields, where they stand, knee-deep in the heavy snow, and gaze out upon their buried feeding grounds. Why is it? What memories of bygone days haunt them? I, too, am conscious of a desire to explore the woods and fields. I needs must up and away. I, too, must respond to the insistent invitation of the sapsucker's long-roll. Is it just an animal joy in the return of warm days, or is it a sub-conscious memory of hairy ancestors, illy protected against the cold, rejoicing once more in life? I leave that for the reader's speculation.

There are two birds I look for these warning March days, precursors of the real spring birds. The first is a constant dweller in the north; no winter is too cold for him; and yet the first hint of thaw sets his blood a-bounding, and puts a new note in his throat. Down in the thick swamps, where the sapsucker and his relatives spend the winter, a little black and white bird feels the urge of spring time and changes his note from "chick-a-dee-dee" to "phoebe-e-e." Not uncommonly people will inform me that they have heard a phoebe

long before that bird has even thought of journeying northward; knowing what they have heard, I only smile and look interested. If you have not heard the March phoebe note of the chickadee you have missed something well worth while.

The other bird that helps to bring the spring, blazes a trail as it were for the bluebird and robins, is that bird of mystery, the prairie horned lark, which appears in Wisconsin in mid-February or March. Its whistle—one cannot call it a song—while not very musical is decidedly cheery. Usually these birds are found in pairs, though once in a while I find them in flocks of half a dozen. There is no mistaking the bird; the two little tufts of feathers, or horns, upon either side of the head are sufficient to identify it. To a great many people they are just “sparrows,” as every brown or indeterminate bird is. Nevertheless our inconspicuous early visitor and summer resident is a true lark, something which can not be said of our well-beloved “spring of the year” bird, for the meadowlark belongs to the blackbird family and is not a lark at all.

Those are the two birds I think of in connection with the first thaw, perhaps there is some connection between them and the long-roll of the sapsucker. Honestly, I believe that I owe the thaw itself to the drumming of that “wicked woodpecker,” my “bird of faith.”

As I sit here in my pleasant study I can hear the puffing of busy switch-engines down in the yards, the throb of the machinery on the coal-docks, the rat-a-tat-tat” of many busy hammers; yet over all, under all and through all, I can hear the sound of the woodpecker’s long-roll, beating a knell to dying winter. Now I would hear the gladsome sound if I were incarcerated in a cell of solid masonry. What I hear depends largely upon what I am prepared to hear. If I let the sounds of the busy world shut out the higher music, whose fault is it?

Come, are you not conscious of a desire to wander, to get away from the noise and hurly-burly of the town? Have you not heard the long-roll of the sapsucker? Do not wait for spring or summer to journey afield. Now, while the creeks are beginning to rejoice in regained freedom, and the chickadee to call “phoebe-e-e,” take a day off. You need it.

And it was only the long-roll of a sapsucker.

The Townsend's Warbler (*Dendroica townsendi*)

By H. S. Keller

Length: 5½ inches.

Dr. Robert Ridgeway, in the Ornithology of Illinois, uses the following words in speaking of that family of birds called the American Warblers (Mniotiltidae), "No group of birds more deserves the epithet of pretty than the Warblers; Tanagers are splendid; Humming-birds are refulgent; other kinds are brilliant, gaudy or magnificent, but Warblers alone are pretty in the proper and full sense of that term."

As they are full of nervous activity, and are "eminently migratory birds," they seem to flit rather than fly through the United States as they pass northward in the spring to their breeding places, and southward in the fall to their winter homes among the luxuriant forests and plantations of the tropics. All the species are purely American, and as they fly from one extreme to the other of their migratory range they remain but a few days in any intermediate locality. Time seems to be an important matter with them. It would seem as if every moment of daylight was used in the gathering of food and the night hours in continuing their journey.

The American Warblers include more than one hundred species grouped in about twenty genera. Of these species nearly three-fourths are represented in North America at least as summer visitants, the remaining species frequenting only the tropics. Though woodland birds, they exhibit many and widely separated modes of life, some of the species preferring only aquatic regions, while others seek drier soils. Some make their homes in shrubby places, while others are seldom found except in forests. As their food is practically confined to insects, they frequent our lawns and orchards during their migrations, when they fly in companies which may include several species. Mr. Chapman, in his Handbook of Birds of Eastern North America, says, "Some species flit actively from branch to branch, taking their prey from the more exposed parts of the twigs and leaves; others are gleaners, and carefully explore the under surfaces of leaves or crevices in the bark; while several, like Flycatchers, capture a large part of their food on the wing."

The Townsend's Warbler is a native of Western North America, especially near the Pacific coast. Its range extends from Sitka on the north to Central America on the south, where it appears during the winter. In its migration it wanders as far east as Colorado. It breeds from the southern border of the United States northward, nesting in regions of cone-bearing trees. It is said that the nest of this Warbler is usually placed at a considerable height, though at times as low as from five to fifteen feet from the ground. The nest is built of strips of fibrous bark, twigs, long grasses and wool, compactly woven together. This is lined with hair, vegetable down and feathers.

The eggs are described as buffy white, speckled and spotted with reddish brown and lilac-gray, about three-fifths of an inch in length by about one-half of an inch in diameter.



TOWNSEND'S WARBLER.
(*Dendroica townsendi*).
About Life size.

Summer Haunts of Birds

By Alcyona Johnson

Perching on fences, flitting among the wayside weeds and bushes, or nesting in the hedges, we may expect to see certain birds as we stroll along the country roads in the golden days of July and August. They are part of the way, and lend charm and beauty to it, leading one to forget the choking dust, the burning heat and the weariness that attend a walk on the much-traveled way.

There will be the kingbird, of whose identity we are assured when he spreads his tail in flight and shows its white margin. The gay indigo bunting will make low, short flights before us and lead us to quicken our steps in pursuit.

The shrike will be there, too, and looking at his dainty, pleasing little form, we wonder if he really deserves the cruel sounding name of "butcher bird."

The red-headed woodpecker will drum on some half-decayed rail; swallows will circle about, and sparrows of many kinds will move in happy little family flocks. Oh, we shall not be lonely along the country road!

Out in the sun-baked fields of hay, grain and clover, some of our sweetest songbirds spend the joyous summer hours.

They hover over the tall weeds, sway on the grain stems, and call to each other from hidden places. Meadow larks and bobolinks are here—to delight us with their ecstatic songs; dickcissels and bobwhites tell their names over and over, and shy field sparrows sing and sing; then vanish in the sheltering grass.

In briers and bushes and young growth skirting a woodland, other birds are fond of lingering.

From these low shelters they readily fly to the ground. Here they are often found searching for food among the fallen matted leaves. As they peck and scratch noisily, one may approach near enough for a good look at them.

In such a hunting ground we see the chewink—a bird common enough to be better known. But so quick is he in his little flights from bush to bush that only the determined bird-seeker, after long pursuit and much waiting, is rewarded with a satisfying view of the little beauty in his handsome suit of white, jetty black, and reddish brown. Here, too, on the half-sheltered, leaf-carpeted ground, are the olive-backed thrush, builder of the quaint oven-shaped nest, and her kinsman, the russet-clad wood thrush.

In more open places, such as parks, lawns, barnyards and feed lots, we look for cow birds, purple grackles, flickers, robins, chipping sparrows, and red-headed woodpeckers.

Undrained prairie stretches, cat-tail marshes, and reed-covered swamps are the resorts of marsh wrens, swamp sparrows and red-winged black birds. A tuft of coarse grass or a clump of reeds holds the pretty nests built just above the water's reach.

The field pond unsurrounded by plant growth has its bird frequenters, too.

Bank swallows fly into and out of their nests on the border or neighboring bank or sail low over the water, making now and then a graceful dip. Pretty

ring-necked killdeer wades in the shallow water and makes odd tracks in the mud.

Small fish and plentiful and varied insect life draw many birds to the regions of brooks, creeks and rivers.

Phoebes, pewees and black-capped warblers and other flycatchers come for the insects, while here the big, ungainly looking kingfisher finds conditions just to his liking: a home in the bank, food in the stream and a look-out station in snag or upturned root. A fisherman of ancient fame is he, with most commendable patience.

To thorn bushes and thickets of wild crab apple and plum we turn to watch catbirds, thrashers, chats and shy cuckoos glide among the thorn-set branches.

While birds of almost every common kind stop occasionally on the forest borders, we do not see many in the denser parts. Owls, hawks and crows break the silence, and redstarts, jays and tanagers make gleams of color in the more open spaces.

But it needs no wandering to put us in touch with the birds. Lo, they come to our abodes. Wrens and blue birds and robins, vireoes, pewees and martins, cardinals and swifts, will be joyous neighbors to us all summer long, and from roof, porch, chimney, barn rafters or orchard shade will gladden us with their presence and song.

"Where can man wander, or where can he dwell,

Beautiful birds, that ye come not as well?"

The poet is right; birds, joy-givers, are everywhere.

The Parula Warbler (*Compsothlypis americana*)

By Gerard Alan Abbott

Length: $4\frac{1}{2}$ inches. Similar to northern Parula Warbler.

The range of the Parula Warbler is eastern North America, breeding from the Gulf to Canada, and wintering in Florida and south.

The head and throat of this warbler is deep bluish gray, becoming much blacker on the breast. This appearance has suggested the name parula warbler. Parula Warblers have been subdivided and are described as northern parula and the parula. As usual, we find the larger or hardier bird visits the more rigorous climates, as the northern parula, inhabiting the states bordering the Great Lakes and New England, is slightly larger than the parula which may be found south of the Ohio River, ranging from the Atlantic coast to Texas. Both varieties are frequently called the blue yellow-backed warbler.

The food consists of spiders, small insects, including flies and various other winged forms, and caterpillars, which they are very industrious in gathering from underneath leaves and inconspicuous branches of the trees they frequent. Like other warblers, they are highly useful to horticulture.

Aside from the cerulean warbler probably no other member of this family



PARULA WARBLER.
(*Compothlypis americana*).
Life-size.

lives at so great an elevation above the ground except those forms which are partial to coniferous trees. The peculiar song ends in a little screech.

Sometimes these birds nest in small colonies. Like the cedar waxing and dickcissel they are irregular residents, breeding in some parts during certain years and perhaps they are not seen again in the same locality for several seasons.

Their manner of nest-building is unique, as they are partial to trees which are draped with usnea moss. Among the hanging festoons of this "Spanish moss" the little birds construct a cavity into which they carry soft vegetable substances such as thistle-down and the "cotton" of the cottonwood. The nests are difficult to detect unless one is fortunate enough to observe the birds when they are entering these long appendages. Usually four white delicately wreathed eggs are laid in May.

Neltje Blanchan has most charmingly written about this dainty bird. She says: "A number of such airy, tiny beauties flitting about among the blossoms of the shrubbery on a bright May morning and swaying on the slenderest branches with their inimitable grace, is a sight that the memory should retain into old age. They seem the very embodiment of life, joy, beauty, grace; of everything lovely that birds by any possibility could be. Apparently they are wafted about the garden; they fly with no more effort than a dainty lifting of the wings, as if to catch the breeze that seems to lift them as it might a bunch of thistle-down. They go through a great variety of charming posturings as they hunt for their food upon the blossoms and tender, fresh twigs, now creeping like a nuthatch along the bark and peering into the crevices, now gracefully swaying and balancing like a goldfinch upon a slender, pendant stem. One little sprite pauses in its hunt for insects to raise its pretty head and thrill a short and wiry song."

Hither the busy birds shall flutter,

With the light timber for their nests,

And, pausing from their labor, utter

The morning sunshine in their breasts.

—James Russell Lowell.

A Few Interesting Facts About Bird Migration

By Gayne T. K. Norton

"Why do the birds fly south in the fall?" This is a question asked many times each fall that is prompted by the great flocks of birds that leave and return to North America periodically, and a question to which no conclusive answer has yet been found.

The Biological Survey of the United States Department of Agriculture has collected the largest amount of data on bird migration ever assembled in the United States; there are over 500,000 facts on record, the collection of which has taken twenty-five years and with which it is possible to make broader and safer generalizations on this subject, which has always been a mystery to the average person, than have ever before been made.

Yet, despite the large amount of information on file, and the fact that bird migration has been noted for 2,000 years, the question: "Why do North American birds migrate?" is still unanswered. Two theories are advanced, and of these the Bulletin of the Biological Survey says in part:

"According to the more commonly accepted theory, ages ago the United States and Canada swarmed with non-migratory bird life, long before the Arctic ice-fields, advancing south during the glacial era, rendered uninhabitable the northern half of the continent. The birds' love of home influenced them to remain near the nesting site until the approaching ice began, for the first time, to produce a winter—that is, a period of bad weather which so reduced the food supply as to compel the birds to move or starve.

"As the ice approached very gradually, now and then receding, these first migrations were of short duration and distance; in short, the habit of migration possessed the birds at the same time that the changing seasons in the year replaced the continuous semi-tropical conditions of the pre-glacial eras.

"As the ice advanced southward the swing to the north in spring migration was shortened and the fall retreat to a suitable winter home, lengthened; until during the height of the glacial period birds were practically confined to Central and South America. The habit of migration had been formed, however, and when the ice receded toward its present position, the birds followed it northward, and in time established their present long and diversified migration routes."

That is the first theory; according to the second, the birds' real home is in the south; all bird life tends by overproduction to overcrowding, and at the end of the glacial era, the birds, seeking in all directions for suitable breeding grounds, gradually worked their way north. But the winter abiding place was still the home and to this they returned as soon as the breeding season was over.

Whichever theory is accepted, the fact remains that southward migration is due to the changing food supply; North America possesses enormous summer food supplies for the birds, but they must return south for the winter. The

overcrowding which would necessarily ensue should they remain is prevented by the spring exodus northward. No such movement occurs toward the corresponding southern latitudes.

It is said the weather in the winter home has nothing to do with starting the birds on the spring migration, except in the case of a few, such as some ducks and geese, which press northward as fast as open water appears. There is no change in the temperature to warn the hundred or more species of North American birds that it is time to migrate northward. "It must be a force from within," says the Bulletin, "a physiological change warning them of the approach of the breeding season," which causes the flight.

Most of the birds migrate at night, though some fly during the day. Their flight begins after dark and stops before dawn, they cover more distance before midnight than they do after, though they do not fly at their greatest speed, seldom traveling more than forty miles an hour. The average for all species in the spring is not more than twenty-three miles a day forward advance; the advance is slow because the birds zigzag so much in search of food.

Some birds make very rapid and lengthy flights; the purple martin, for instance, has made the trip from New Orleans to Winnipeg in twelve nights, an average of one hundred and twenty miles a night. The fact that most birds can fly several hundred miles without stopping is proven by their flying across the Gulf of Mexico, from five to seven hundred miles.

Among the long-distance fliers are some of our commonest birds. The scarlet tanager goes from Canada to Peru, the bobolink from New England to Brazil; the martins, swallows, nighthawks and some thrushes, also to South America. The black-poll warblers nest in Alaska and winter in South America—a 5,000 mile flight. The nighthawk has probably the longest land bird migration, he flies 7,000 miles from Alaska to Argentina.

These distances are beaten by the shore birds, nineteen species of which nest north of the Arctic circle, they all winter in South America and six species go to Patagonia, a migration trip of 8,000 miles. The most amazing of all migrants is the golden plover, which makes a single flight of 2,400 miles, the longest known flight of any bird. Coming down from the Arctic the golden plover makes his great non-stop flight from Nova Scotia; leaving the coast the birds by the thousands fly due south across the ocean to South America without a stop, it is not known how long it takes the birds. The golden plover of the Pacific makes a 2,000 mile flight straight across the islandless Pacific from Alaska to Hawaii.

"It seems incredible that the birds do not lose their way," says the Bulletin, but the fact remains that they return each year to their old haunts or nests and never seem to be exhausted after their long flights.

The habits of the chimney swift form an interesting mystery in the migratory habits of birds. For five months they absolutely disappear, as if they went to another planet. The flock slowly drifts south, joining with others until on the coast of the Gulf of Mexico they become an innumerable host. Then they are gone.

Where they go has never been found out, but in the last week of March a twittering is heard far overhead and they are again at the Gulf coast.

The migration season is full of perils for the birds and the casualty lists are large; many are drowned when storms catch them over large bodies of water, many others are killed in striking high objects. The Washington Monument and the Statue of Liberty have both killed many migrants. The lights of the lighthouse lure many birds to their death also; a fixed white light is the deadliest for it acts like a magnet on the birds; a flashing light frightens the birds and a red light is avoided by them.

The Yellow-Legs (*Totanus flavipes*)

By Lynds Jones

Synonyms.—Tattler; Lesser Tattler.

Description.—*Adult in summer*: Head and neck all round (save throat), and breast, finely streaked and dusky, on white or ashy-white ground, and markings on the sides of breast broader and heavier, passing into loose and rather indistinct bars on sides; remaining under parts white; back and upper parts in general light brownish gray, tinging also hind-neck and crown; feathers of back and scapulars with blackish centers, and irregular spotting of ashy white; the larger feathers, especially tertials, with incomplete black bars; primaries dusky; the secondaries with narrow edging of white; upper tail-coverts white, the terminal portion of feathers dusky-barred; tail white or ashy gray, centrally, barred with dusky; bill and feet as in preceding species. *Winter plumage*: Above light brownish gray, with some darker shaft-lines, and considerable white spotting on edges of feathers; markings of neck and under parts much paler, grayish brown, partially obscured or blended. Length about 10.50 (266.7); average of five Columbus specimens: wing, 6.11 (155.2); tail, 2.36 (59.9); bill, 1.46 (37.1); tarsus, 1.98 (50.3).

Recognition Marks.—Killdeer size; like preceding species but smaller.

Eggs, 3-4, "buffy (variable as to shade), distinctly (sometimes broadly) spotted or blotched with dark madder or Vandyke brown and purplish gray." Average size, 1.69 x 1.15 (42.9 x 29.2) (Ridgw.).

Range.—America in general, breeding in the cold temperate and subarctic districts, and migrating south in winter to southern South America. Less common in western than in eastern North America.

This smaller representative of the genus *Totanus* is even more generally distributed, if possible, than its larger brother, *T. melanoleucus*. During the spring migrations it spreads over the state and rests wherever there is flooded land. Although not solitary by preference, the birds are rather independent, and I have seen single individuals, or twos and threes, quite as often as larger flocks. These



LESSER YELLOW LEGS.
(*Totanus flavipes*).
♂ Life-size.

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California Quail (*Lophortyx californica* and varieties)

Length, about 9½ inches. Distinguished from Gambels' quail by the reddish instead of black belly.

Range.—Resident in the Pacific Coast region from southwestern Oregon and western Nevada through California and Lower California.

The California quail is one of our most beautiful game birds and the sight of a large covey running daintily along, with crests nodding and fine plumage gleaming in the sun is a sight to remember. Before quail were so much persecuted, covies were common in the gardens of Oakland and other California towns, seemingly as much at home among calla lilies and rosebushes as in the stubble field. The numerous families in the fall associate in bands of three or four hundred, or even more. The California quail has learned one lesson never acquired by our bob-white—to roost in trees and bushes instead of on the ground, and no doubt the safety thus obtained during the hours of darkness is one reason for its great abundance.

This quail is the greatest vegetarian of any of our game birds, the vegetable food eaten by over 600 individuals examined amounting to 95 per cent of the total food consumed. Unfortunately the California quail consumes much grain when germinating and thus damages the growing crop; it also attacks grapes and, while it does not eat a great many, it seriously damages bunches by puncturing a few grapes here and there, so ruining the fruit for market.

Protect Our Migratory Birds

The effect of recent legislation for the protection of migratory birds is already apparent, but more is needed. At the present there is before the senate for ratification a treaty between the United States and Canada for the protection of these birds. It has been signed by the plenipotentiaries of both governments and by the president and has been reported favorably by the senate committee on foreign relations. It would be a great pity and loss to both countries if it should fail of ratification in the press of the senate's other affairs before adjournment.

The protection of our bird life is of importance not only to the naturalist and nature lover, but to the farmer and to all classes, for all have an interest in the service birds perform in the checking of insect scourges, to say nothing of the pleasure they give. Unregulated destruction by shortsighted sportsmen and by men who sell for the market already had done serious damage when the campaign of the Audubon society began to make itself felt. Local control, where accomplished, was inefficient, and this has been supplemented by interstate regulation. The next and last step for protection is continental co-operation, which will be established by the treaty now before the senate with an enabling act to carry it into effect.

The senate should not fail to act at this session.

How Our Birds Spend the Winter

In the bird world there is supposed to be no class distinction, no rich, no poor: all are equipped alike for the battle of life by instinct. Yet those of us who have followed the lives of even a score of the most familiar birds throughout the year must confess that they are made either hard or pleasant by circumstances of birth very much like our own.

From our viewpoint in the middle and New England states birds classify themselves roughly in two groups,—the summer, and the permanent residents. I pick half a dozen birds from each of these groups, consider their comings and goings. You will presently see that neither among birds nor among men are all born free and equal, and that the traveler on the wing is as much linked to law and the potency of heredity as the wearer of shoes.

The birds that we know as summer residents, such as the Baltimore Oriole, Scarlet Tanager, Bobolink, Barn Swallow, Wood Thrush and Rose-breasted Grosbeak, really enjoy two summers, the same as they wear two changes of clothing during the year.

When the spring impulse, let loose by melting snow, steals over the northern hemisphere, it finds the birds that come to us for their home-making within our borders, because it is the homestead of their tribe, already on the wing. There are perils by land and sea in this journey, long flights and fastings and buffetings; but when at last they arrive it is usually to find good marketing and a roof-tree waiting.

Of course, there are sometimes ill-timed journeys, when winter has given a false alarm of retreat and, coming back, locks up the larder, and the tired wayfarers perish by the way,—but this is the exception, not the rule. Arriving in their summer haunts, these birds have a period of ecstatic song and courtship before settling down to the real labors of raising one, two, or sometimes, as with the House Wrens, three broods.

After the breeding season comes a period of enforced rest, called the molting time. While the nest-worn feathers are being changed, the birds at this season are enervated and lacking the strength for long flight, they mope and gossip (yes, I've heard them, of this I'm positive) in well-leafed shade, all the while eating well of the plenty of late summer; for August, the lazy month, is the time that Nature has set apart for the feather-changing process.

Then follows two months or more of the social and community life, with the excitement of flocking and the southward journey; and, when winter comes to us, these summer birds are entering upon a second and tropical summer—a vacation season without care or responsibility, from which they will finally emerge refreshed and provided with new spring garments for the return flight.

But what of the other birds, winter residents with us or wandering visitors alike? Their summer cares are the same as those that fly before the frost that they must face, compelled by a force outside of the region of their own will.

Take, for example, the Tree Sparrow, Downy Woodpecker, American Gold-

finch, the slender-billed Brown Creeper, the dainty Redpoll, and a score of others, including the Ruffed Grouse and cheerful Bob-white. What is their vacation season, and how is it spent? In what, if a similar condition existed among human beings, would be considered a time of pinching economy akin to famine, and the enduring of which not only patiently but cheerfully by men would be called heroism. But as birds do not push trembling hands in our faces and clamor for charity, we forget their needs and they too often disappear, deprived of natural food and shelter by the very march of civilization of which we are proud.

If they cannot speak for themselves, their friends should never cease to do it for them in the same old words, winter after winter. "Do not clear away the wild hedges—leave some shocks of corn in your field, scatter grain sweepings in likely places, fasten suet to your orchard tree, and spread a lunch-counter under your window out of the reach of *cats*! Do not use that irresponsible argument, "There are never any birds in winter where I live"; for if there are none the responsibility is yours for not aiding them to be there. For we are all keepers of our brother, in one sense or another, and the larger brotherhood includes all forms of sensate life. When we deliberately shirk responsibility we have ceased to live in the best sense.

Remember, my friend, in February lies the stress of winter. It is not too late; begin now, feed the hungry birds, and as you do it study the mystery of their winter lives; for, as the bird song, of all music, sinks the deepest into the heart of memory, even as the bird's air-cleaving wing bears it the farthest through that which to us is the unfathomable.—*M. O. II*'.

The Song of the Poplar

By Millie Noel Long

Green and gray, slate-color and white
Are the hues of the trees and clouds tonight.
Dashing, pattering drops of rain
Make miniature rivers on the pane.
The poplar is showing its changing light,
Silver and delicate green and white,
Dancing and tossing in seeming glee.
And its swish has a musical sound to me—
A sonata complete, with an unwritten score,
Its Allegro repeated o'er and o'er—
A song in snatches, a rhythmic bass,
Every part in its rightful place ;
A sound like the ringing of elfin chimes
Adds to the harmony, too, betimes.
When the storm is spent and the wind is gone
The rhythmic bass will still go on,
With retarded movement, beating slow,—
And the solemn Andante, sweet and low
Will change to Adagio, deep and faint
Pulsing on with a sad complaint
Till a fragment cloud sends a frisking breeze
Through the gently swaying, pensive trees,
And brings back the chime as of elfin bells
And the added harmony louder swells
And more assured and faster grows
As the brightened horizon faintly glows,
Till the merry Allegro, back once more,
Is repeated joyously, o'er and o'er.

A belated bird-song, mellow and clear,
Is heard from a clump of bushes near,
Then bird-song, and music, and faint, far light
Give place to the slumbrous peace of night.

The Blue-jay.

Simply.

The pret - ty crown on blue - jay's head is

This system contains the first three measures of the song. It features a vocal line in treble clef and a piano accompaniment in grand staff (treble and bass clefs). The key signature has one flat (B-flat) and the time signature is 4/4. The lyrics are written below the vocal line, with slurs grouping the words 'pret - ty crown on' and 'blue - jay's head is'.

fas-tened on so tight, He nev - er e - ven

This system contains the next three measures. The musical notation continues with the same instruments and key signature. The lyrics 'fas-tened on so tight, He nev - er e - ven' are written below the vocal line, with slurs grouping 'fas-tened on so tight,' and 'He nev - er e - ven'.

takes it off To go to sleep at night.

This system contains the final three measures of the song. The musical notation concludes with a double bar line. The lyrics 'takes it off To go to sleep at night.' are written below the vocal line, with slurs grouping 'takes it off' and 'To go to sleep at night.'

The Bluebird

By Alexander Wilson

When winter's cold tempest and snows are no more,
Green meadows and brown-furrowed fields reappearing,
The fishermen hauling their shad to the shore,
And cloud-cleaving geese to the Lakes are a-steering;
When first the lone butterfly flits on the wing;
When red glow the maples, so fresh and so pleasing,
Oh then comes the bluebird, the herald of Spring!
And hails with his warblings the charms of the season.

Then loud-piping frogs make the marshes to ring;
Then warm glows the sunshine, and fine is the weather;
The blue woodland flowers just beginning to spring,
And spicewood and sassafras budding together;
Oh then to your gardens, ye housewives, repair!
Your walks border up; sow and plant at your leisure;
The bluebird will chant from his box such an air
That all your hard toils will seem truly a pleasure.

He flits through the orchard, he visits each tree,
The red flowering peach and the apple's sweet blossoms;
He snaps up destroyers wherever they be,
And seizes the caitiffs that lurk in their bosoms.
He drags the vile grub from the corn he devours,
The worms from their webs where they riot and welter;
His song and his services freely are ours,
And all that he asks is in summer a shelter.

The ploughman is pleased when he gleans in his train,
Now searching the furrows, now mounting to cheer him;
The gardener delights in his sweet simple strain,
And leans on his spade to survey and to hear him;
The slow-lingering schoolboys forget they'll be chid,
While gazing intent as he warbles before 'em
In mantle of sky-blue, and bosoms so red,
That each little loiterer seems to adore him.

When all the gay scenes of the summer are o'er,
And autumn slow enters so silent and fallow,
And millions of warblers, that charmed us before,
Have fled in the train of the sun-seeking swallow,

The bluebird, forsaken, yet true to his home,
Still lingers and looks for a milder tomorrow.
Till, forced by the horrors of winter to roam,
He sings his adieu in a lone note of sorrow.

While spring's lovely season, serene, dewy, warm,
The green face of earth and the pure blue of heaven,
Or love's native music have influence to charm,
Or sympathy's glow to our feelings is given,
Still dear to each bosom the bluebird shall be;
His voice, like the thrillings of hope, is a treasure;
For, through bleakest storms if a calm he but see,
He comes to remind us of sunshine and pleasure!

The Long-Billed Curlew (*Numenius americanus*)

By Henry Oldys

Range: Breeds from central British Columbia, southern Saskatchewan, and Manitoba to northeastern California, northern New Mexico, and northwestern Texas; winters from central California and southern Arizona south to Guatemala, and on Atlantic coast from South Carolina to Florida, Louisiana, and Texas.

Few in our times have known this big curlew in the Atlantic states, although a century or less ago flocks of considerable size were not uncommon. Many of us, however, have made the acquaintance of the bird in the Western states, where it breeds or did breed, from Canada to Texas. Those best acquainted with the recent status of the bird see little hope for it. The natural extension of agriculture has greatly limited its breeding grounds, and for this there is no remedy. Nor should one be desired, since in the mind of every right thinking citizen farms are more important than breeding grounds for curlew. Nevertheless, the curlew is not an over-shy bird, and, if accorded reasonable treatment, and left undisturbed during the breeding season, would long survive in its old haunts. Protected till 1918 under the Federal law, it needs in addition only the protection of public sentiment to live on indefinitely. Its flesh is rather tough and dry, even on the prairie where it feeds much upon insects and berries, while in its seaside resorts, where it subsists on marine life, its meat is too strong to be palatable. As the birds eat many insects and crawfish, we may plead its utility as an additional argument in its favor, and beg sportsmen and others who may be said to hold the life of the species in their hands to abstain from killing curlews. Continued shooting means speedy extinction.

Synonym.—Sickle-bill.

Description.—*Adult*: General color ochraceous-buff to pale cinnamon-rufous; upper parts varied with dusky, in broad streaks on crown, in narrow streaks on sides of head and neck, in heavy, central, "herring-bone," connected bars

LONG-BILLED CURLEW.
 $\frac{1}{2}$ Life-size

on back and tertials, and so variously mottled throughout, only the outer webs of outer primaries being of solid color,—dusky; below sharply streaked on breast and sides, sometimes sparingly barred with blackish, the ground color reaching its greatest purity and intensity on axillars; bill very long, considerably decurved toward tip; the culmen brownish dusky, the lower mandible yellow at base and darkening toward tip; feet and legs stout, dark; claws short and broad. Length 20.00-26.00 (508.-660.4); wing 10.75 (273.1); tail 4.10 (.104.1); bill up to 8.50 (215.9); av. about 6.50 (165.1); tarsus 3.15 (80.).

Recognition Marks.—About crow size,—making some allowance for bill; pale cinnamon coloration; long decurved bill distinctive. Has a quavering cry somewhat like that of the Bartramian sandpiper.

Eggs: Four, ashy brown or clay-color, spotted and blotched with chocolate. Av. size, 2.58 x 1.82 (65.5 x 46.2).

A bird of such extraordinary appearance as the sickle-bill would attract attention anywhere, but especially in our section of the country, where it is no longer common. Its peculiarly developed mandibles are well calculated to reap a harvest not only of slugs and aquatic molecules, but of insects and berries as well. Though once not uncommon throughout the United States, the bird is ill-adapted to the devious ways of our shotgun civilization, and is not to be found in any considerable numbers only on the prairies and barren foothills of the West. Whenever found on the Atlantic Coast, the curlew frequents marshes or sandy shores, much after the fashion of its kind, but in the West it is by no means attached to the vicinity of water.

During migration the curlews move in small wedge-shaped companies with leisurely flapping wings. A quavering whistle from the leader proclaims their progress, and a ready hunter may call them down to decoys by a skillful imitation of their cry. If successfully diverted from their course, the birds approach the ground with a majestic slow sail and present an easy mark. If allowed to alight they touch the ground lightly, with wings upraised, and the sun reveals the beauty of the delicate cinnamon linings of the wings before these members are gently folded.

Elsewhere upon the ground the curlews are unapproachable, except during the breeding season. So sympathetic are they, however, and so devoted to their traveling companions, that if one falls a victim to the gun, the gunner holds the others at his mercy. With clamorous solicitude they gather about their fallen comrade and urge him to leave the fatal spot, receiving, of course, their own death wounds as reward for their fidelity.

When the nest is discovered, a mere depression anywhere in the open prairie, the parent birds throw caution to the winds and hover about the intruder in an agony of apprehension, filling the air with quavering plaints, and sometimes interposing their bodies to shield the young. At such times the long mandibles, moving through a wide arc with every utterance, appear nothing short of ridiculous, but it does not occur to one to laugh at the time,—the bird is so terribly in earnest.

Shall We Feed the Birds?

By Manley B. Townsend

Why not? Well, for the same reason that it is a good plan to keep a cat hungry when we want her to function as a mouser. Birds eat up vermin, just as cats do; why should not the same rule work with them? So a number of authorities have recently argued.

Frequently some one with more zeal than knowledge denounces the winter feeding of the birds as unnecessary and economically unwise. Such an attitude is a good illustration of that line of Pope, "A little learning is a dangerous thing." The latest manifesto on this subject is by a Kansas professor, who declares that feeding the birds has a tendency to diminish their usefulness as destroyers of insect-eggs, pupae, and hibernating adults, as it removes the necessity that is supposed to keep the birds hustling.

It would seem that there might be something in this reasoning, but what are the facts?

The birds prefer their natural food. Where they can get that in sufficient quantities they do not care for food that we give them. This is proved conclusively by the fact that only winter feeding proves successful.

When spring comes the birds leave our food, no matter how attractive it may be. Only dire necessity drives them to our feeding-stations. During the winter many birds have difficulty in finding sufficient food. Search as they may, the natural supply is inadequate. The spark of life burns low, and, alas! too often flickers out. With a full stomach a bird can bid defiance to any weather. With fuel under the boiler, sufficient steam is generated to keep the machinery running. Food placed out for the birds may save many a little life by providing just the necessary additional fuel needed to keep up the steam. The first sharp edge of hunger blunted, the bird will pay for his dinner by searching the trees in the vicinity and destroying all the insects that he can find, for he always prefers his natural food.

It pays, in dollars and cents, to feed the birds. Every orchard should at regular intervals have suet fastened to the trees, as well as bird-boxes for nesting-purposes. There is pleasure in watching the feeding birds—their beautiful colors, their graceful movements, their engaging ways, to say nothing of gaining their confidence and perhaps persuading them to light upon us and take food from our hand. There is a joy in such companionship, a deep satisfaction in ministering to a dependent life. On Thanksgiving Day, as I sat down to dinner, I glanced out of the window into the apple-tree. There was a little downy woodpecker at his Thanksgiving dinner of suet (we both had suet-pudding that day), and my heart was the lighter and my Thanksgiving the brighter because I had a tiny feathered guest to enjoy my bounty. Try it for yourself and see if this is not so.

Arkansas Goldfinch (*Astragalinus psaltria* and sub-species)

Length: About $4\frac{1}{2}$ inches. Upper parts olive green, more or less mixed with black in the sub-species; under parts yellow.

Range: Breeds from southern Oregon, Utah, and northern Colorado to southern Lower California and into Mexico.

In the far west this goldfinch takes the place of the eastern goldfinch which in a general way it much resembles in habits. Like that bird, it is rarely seen, save in the breeding season, except in small parties, the members of which seem to be on terms of the utmost familiarity and accord. The flight of this species, as of its kindred, is exceedingly characteristic. It disdains to cleave the air in straight lines but progresses in a series of graceful sinuous curves, which, however, take the little aeronaut rapidly from point to point. This flight is a sure mark of identification. The bird has a sweet warbling song and even its call notes are plaintive and pleasing. It abounds in orchards and gardens and is often to be seen by the roadside gleaning its food from the tall stems of thistle, sun-flowers, groundsel and other seed-bearing plants and weeds, all of them either useless or positively harmful. It is by no means wholly a vegetarian, however, and eats many plant lice, sometimes filling the stomach with these minute creatures to the exclusion of all other food. As a weevil eater it is peerless, and it does no harm to any product of husbandry. Altogether this pretty little goldfinch deserves protection at the hands of man.

Franklin's Gull (*Larus franklin*)

Length: 15 inches. During its residence in the United States Franklin's gull is practically confined to the interior and is the only inland gull with black head and red bill.

Range: Breeds in the Dakotas, Iowa, Minnesota, and the neighboring parts of southern Canada; winters from the Gulf Coast to South America.

Habits and economic status: Nearly all of our gulls are coast-loving species and spend comparatively little of their time in fresh water, but Franklin's is a true inland gull. Extensive marshes bordering shallow lakes are its chosen breeding grounds, and as many such areas are being reclaimed for agricultural purposes it behooves the tillers of the soil to protect this valuable species. When undisturbed this gull becomes quite fearless and follows the plowman to gather the grubs and worms from the newly turned furrows. It lives almost exclusively upon insects, of which it consumes great quantities. Its hearty appetite is manifest from the contents of a few stomachs: A, 327 nymphs of dragonflies; B, 340 grasshoppers, 52 bugs, 3 beetles, 2 wasps, and 1 spider; C, 82 beetles, 87 bugs, 984 ants, 1 cricket, 1 grasshopper, and 2 spiders. About four-fifths of the total food is grasshoppers, a strong point in favor of this bird. Other injurious creatures eaten are billbugs, squash bugs, leaf-hoppers, click beetles (adults of wireworms), May beetles (adults of white grubs), and weevils. Franklin's gull is probably the most beneficial bird of its group.

The Indigo Bunting (*Passerina cyanea*)

By W. Leon Dawson

Also Called Indigo-Bird

Length: About 5½ inches.

The male is easily identified by the rich blue color, with black wings and tail. The female is warm brown.

Range: Breeds from eastern North Dakota, central Minnesota, northwestern Michigan, southern Ontario and southern New Brunswick to central Texas, southern Louisiana, central Alabama and central Georgia; winters from southern Mexico to Panama.

The Indigo-Bird is the brightest colored sparrow that visits the north, but one can hardly believe that the sprightly dandy, clad in his rich blue suit, is the mate of the inconspicuous brown bird that seeks assiduously to conceal herself in the leafy cover, as though a bit ashamed of the contrast between her working suit and the holiday garb of her spouse. The indigo is a frequenter of sprout land, of brushy thickets and of open woodland, and the male is fond of singing his cheerful lay from the topmost twig of a tall shrub or tree, as though challenging the world to produce his equal. For such a dainty bird, the nest is a singularly inartistic structure and very carelessly built. It is placed in the crotch of some low leafy bush and is not at all difficult to find.

The fine feathers of the male are not the only claim of the Indigo-Bird to our interest. Its food consists largely of weed seed, but it eats many insects, including a goodly proportion of grasshoppers and caterpillars.

To a casual observer the male and female Indigo-Birds appear to live in separate spheres and to have very little in common. This is partly because the female is such a plain-looking "brown bird" that it requires the closest scrutiny to discover upon her shoulders faint traces of the royal blue which marks her lord. Then, again, she is a most prosaic creature, skulking about through thickets and briar patches or fussing with the children, while her handsome mate spends his time in the tree-tops singing with his little might and main. As a result, the Indigo-bird proper is one of the most familiar features of wood's edge and wayside, while the Indigo-bird, by courtesy—or shall we say by marriage?—is one of the least known of sparrows.

The singing bird makes no attempt at concealment, but seeks the most prominent position possible on telegraph wire or tree-top, and repeats at frequent intervals a piercing but not very melodious warble, which rises and falls in sharp cadences, and finishes with a hasty jumble of unfinished notes, as though the singer were out of breath. This song is kept up through the greater part of the day, and the singer is at his very best during the warm months of July and August. At this time his is often the only voice which relieves the monotony of a sultry day, and his efforts have won warm admiration on this account. Now and then the bird dives down to earth to attend to some domestic duty, but he is back again presently "climbing a golden staircase of song" as he flits



from branch to branch, until he has gained his topmost perch again. Here he sings for a time with such vigor that we are sure he is glad to be quit of his vexatious cares.

If one looks in the bushes or crowded, rank weeds for the Indigo's nest he will soon be joined in the search by a wild-eyed female, who dogs his every step and expostulates with him by vigorous *chips* for every movement of the foliage. The maternal Indigo is the soul of suspicion, and her protests are so emphatic that the inquisitor believes himself "hot" when he may be a dozen yards away. As a result the nest is rather hard to find; and the number found in a season's nesting will be out of all proportion to the abundance of birds.

The nests, while usually bulky, are models of neatness and strength. Dead leaves and grasses make up its mass, and there is a copious lining of fine grasses with an admixture of horse-hair. Often two, and sometimes three, broods are raised in a season.

The eggs are of beautiful pale blue, warmed, while fresh, by the color of the contents. Of their occasional variation Dr. Coues says: "The egg is variably described as pure white, plain blue, or bluish speckled with reddish. The fact appears to be, not that these statements are conflicting or any of them erroneous, but that different eggs vary accordingly. It seems to be the general rule with normally bluish eggs that they range in shade from quite blue to white, and are occasionally speckled."

Hudsonian Curlew (*Numenius Hudsonicus*)

Range: Breeds on coast of Alaska from mouth of Yukon to Kotzebue Sound, and on coast of northern Mackenzie; winters from lower California to southern Honduras, from Ecuador to southern Chile, and from British Guiana to mouth of Amazon.

Within the memory of many still living, the jack curlew, as this bird is best known to sportsmen, was the least abundant of the three species of curlew here mentioned. To-day it is the most numerous if, indeed, we still may speak of the Eskimo curlew as a living species. The journeys of the jack curlew north and south rarely take it into the interior, and except when nesting, it sticks rather closely to the vicinity of salt water. It is difficult to explain just why this curlew should have maintained its numbers so well when its relatives have been so reduced, but persecution has taught it the art of self protection and it is now no easy matter to bag a Hudsonian curlew. Then, too, its inaccessible nesting-grounds aid in its preservation, although in this respect it is no better off than was the Eskimo curlew, while the latter bird had the advantage of an oversea route to South America. It is possible, however, that, while the passage over the ocean saved the Eskimo curlew from the onslaught of sportsmen, except in easterly storms which drove it in large flocks on our coast, it exposed the flocks to the fury of the elements during off-shore gales.

The bristle-thigh, our fourth species of curlew, is little known in America. It certainly summers and probably breeds in Alaska, and in fall disperses widely over the South Pacific islands.

The Sharp-Shinned Hawk (*Accipiter velox*)

By Edward Howe Forbush

We can say much in favor of most birds, but the Sharp-shinned Hawk is an exception to the rule. From the standpoint of the utilitarian, it must be regarded as bad, and even vicious. It is a bold marauder, and, judged by the standard of the poultryman, the game-keeper, the sportsman, or the bird-protectionists, it is a convicted felon. Its trade is battle, murder and sudden death, and, unfortunately, the greater number of its victims are the weak and defenseless young of game birds and poultry, and the beautiful and useful songsters of field, farm, grove, orchard and forest.

This small bird is one of a group of "ignoble" Hawks,—the Accipiters—which may be distinguished from the Sparrow-Hawk, Pigeon-Hawk and other Falcons by their comparatively short, rounded wings and their long tails. The Falcons have a slightly shorter tail and long, pointed wings. The Buteos, or Buzzards, have long, broad wings and a broad tail, and often soar in circles; but the Accipiters move across the country by alternately flapping and sailing. The Sharp-shinned Hawk is the smallest of the Accipiters, and is sometimes wrongly called the Sparrow-Hawk or Pigeon-Hawk. In general appearance and habits, it resembles two larger species, Cooper's Hawk and the American Goshawk. Cooper's Hawk is next in size to the Sharp-shinned Hawk, and the two are much alike in appearance. The adults of each species in some parts of the country are known as "Blue-Darters." These three species, because of their numbers, wide distribution, and great rapacity, probably commit greater and more widespread havoc among birds and game than any other Hawks in North America. The larger pernicious Falcons are generally far less common than the Accipiters, and the Buzzard Hawks and Marsh Hawks are generally more useful than injurious to man.

The Sharp-shinned Hawk is larger than either the Sparrow Hawk or the Pigeon-Hawk, and is rather longer and slimmer. Specimens average a little over a foot in length. The largest specimens are about two inches smaller than the smallest specimens of the Cooper's Hawk. The plumage at full maturity is usually slaty or bluish gray above; the under parts are whitish—barred and marked with reddish. Immature birds are brown above and streaked with dark brown or reddish brown below. The tail is square-tipped and somewhat heavily barred.

The distribution of this Hawk is nearly co-extensive with the continent of North America. It breeds throughout most of the United States and Canada, and winters from the latitude of Massachusetts to Central America. In September, numbers of these Hawks may be seen high in air, migrating southward in a leisurely manner, and so they follow the southern flight of the smaller birds on which they prey.

From April until early June, according to the latitude, the wooing of the Hawks begins. Perched in an exposed position, the male issues his shrillest call notes, moving about from place to place until a female responds. The ardent



courtship is soon over and then the happy pair fly away in company to select a suitable nesting-site. Nest-building occupies about one week. The nest is usually placed rather high in an evergreen tree, in some sequestered locality. More rarely it is located in a deciduous tree, in a hollow tree, or on some lofty ledge or cliff. Sometimes an old Crow's nest or a squirrel's nest is utilized as a basis upon which to construct the home. In this case the nest is a large, conspicuous structure; but, ordinarily, it is not very noticeable, and, in some cases, it is well concealed by the foliage. It usually consists of a platform of sticks, resting on a whorl of branches and fixed against the trunk of the tree. Dry grasses and strips of bark are usually placed upon this foundation and interwoven to form the nest lining. Some nests are less skillfully formed and are unlined.

The eggs vary in number from three to five, and are pale white, greenish or bluish white, very heavily blotched, spotted and marked with light brown, dark brown, drab, fawn and lavender. These markings often form a ring about some part of the egg. Both sexes join in incubation, and in the care of the young, which, when first hatched, are covered with soft white down.

The young are confined to the nest for about four weeks. Then they begin to climb and flutter about among the branches; but, if undisturbed, they remain in the vicinity of the nest for several weeks longer, where they are still fed by the parents. The woods now resound with their shrill, squealing cries. Having finally strengthened their wings by exercise among the tree-tops, they attempt longer flights, and soon leave their home forever.

This bird is a model of activity and courage. Probably none of the raptorial birds is proportionately its superior in prowess. Its every movement is marked by nervous haste. It is fierce, swift, impetuous—the embodiment of ferocity and rapacity. It does not hesitate to attack birds much larger than itself. Mr. C. J. Maynard tells of one that struck a Night Heron in mid-air, dashing it to the ground. Not seldom it strikes and kills other birds or mammals so large that it cannot carry them away. It has been known to kill and carry off a young pullet so heavy that its toes dragged on the ground. I saw a clamorous Crow follow one of these Hawks and attack it, but the little bird turned on the sable tormentor and drove it ignominiously from the field. Indeed, the Crow was fortunate to escape with its life, so fast and furious was the onslaught of its small, but spirited antagonist. Occasionally a mob of Bluejays will follow and malign one of these Hawks until it becomes enraged and dashes to earth one of the screaming crew, all of whom hasten to escape, leaving their comrade to its fate.

This Hawk hunts forest, orchard, field and meadow. In wooded regions is very destructive to young poultry. Being small and inconspicuous, it can glide quietly into a tree near the poultry-yard, and, watching its chance, dash down diagonally at breathless speed, seize a chicken, and get away before the startled mother hen can come to the rescue. I have even seen the villain sitting impudently upon the gate-post of a chicken-yard, awaiting its chance; but more often it comes low over the ground, just clearing the fence-tops, and is gone with its prey in a moment. A single pair of these Hawks has been known to get twenty or thirty

chickens before the owner realized the cause of his loss. Mr. Ora W. Knight writes that a pair of these birds took ten or twelve chickens daily from a farm-yard for some time before they were shot. Like others of its genus, the Sharp-shin moves ordinarily at a moderate height, alternately sailing and flapping, and always on the lookout for game. As it crosses a river and sails over the meadow, an officious Blackbird rises from its nest in a tussock of reeds, and advances to the attack. The unhappy bird soon realizes its mistake, and, turning, makes for the shelter of the wood, but the Hawk rows the air rapidly with its wings, gaining on the poor Blackbird each second. It follows its quarry through wood and thicket, matching every twist and turn; swift, inexorable and relentless as fate. It can overtake and slay a Bob-White in full flight. It sweeps quietly along a wood path and rises to a dead branch, where it stands almost motionless, scanning all the ground and every tree and thicket, but the little Warblers of the wood have been warned of its approach and, crouching in terror, they will not leave their hiding-places. Impatiently the Hawk leaps forward on the air and soars off to take some heedless songster unawares. The individual Sharp-shins that spend the winter in the North are the hardiest of their species, and their boldness at this season is unsurpassed. More than once this Hawk has dashed into or through a window in winter to strike down a caged Canary. On a cold and snowy day in January one bore down a Bluejay within a few feet of my dog. Doctor Hatch records that while he was riding across the prairies of Minnesota in winter during a furious wind, with the mercury 46 degrees below zero, one of these Hawks passed with inconceivable velocity, close to the ground and seized and bore off a Snow Bunting directly in his path. Sometimes, in such instances, the victim appears to be paralyzed with fright. One winter, one of these Hawks swept into our yard, darted into a flock of Juncos feeding there and seized one that remained crouched on the ground and seemed unable to move until the Hawk struck, while its companions made their escape to the thicket.

Some writers have given the impression that it is impossible for any bird to avoid the sudden and swift attack of this Hawk. Nevertheless it sometimes misses, and loses its prey. A Phebe, sitting on a low branch near the barn cellar, which contained its nest, dove from the limb, escaped the Hawk's talons, turned the corner of the barn and entered the cellar so quickly that the confused Hawk flew away disappointed. A flock of Least Sandpipers or "Peeps" scattered so deftly on the onslaught of this Hawk that all escaped unharmed; but perhaps such a happy consummation is the exception, and not the rule.

Evidently the Sharp-shinned Hawk delights in the chase, and prefers birds to any other food. Dr. A. K. Fisher, of the Biological Survey, reports as follows on the contents of one hundred and seven stomachs of this Hawk that contained food. Six had poultry or game birds, ninety-nine contained other birds, eight contained mice, and five had eaten insects. Dr. B. H. Warren examined nineteen stomachs of this bird, seventeen of which were found to contain remains of poultry or game birds.

This Hawk undoubtedly gets nearly if not all the smaller useful species

of land birds, and it feeds to some extent on mice, shrews, frogs, lizards and insects.

Its destructiveness is emphasized, but the folly of classing all Hawks and Owls together as injurious is shown, by an experience at my home at Wareham, Mass. In 1906, a pair of Screech Owls built their nest and reared their young in a box that we put up for them in a pine grove. This grove was a noted Robin roost and many birds nested in the vicinity. During the season the Owls killed one Robin, a Red-winged Blackbird and several Bluejays, but they subsisted chiefly on mice, and fed their young mainly with mice. The smaller birds increased in numbers during the Owls' stay (possibly on account of the consequent reduction in mice and Jays). All the smaller birds seemed to have entered on an era of prosperity, and they were more numerous on the farm in 1907 than in 1906. In 1908 we were away until July. The Owls had disappeared, and a pair of Sharp-shinned Hawks had a nestful of young in the grove. During July and August these Hawks so harried and destroyed the birds of the neighborhood that practically all were killed or driven away, except two pairs of Song Sparrows and a pair of Robins near the house. For the first time in our experience, the Robin roost, which was formerly haunted by hundreds if not thousands of Robins in summer, was now deserted, and the cries of the Hawks were about the only bird notes heard in the grove. The contrast between the effect produced by these Owls and that caused by the Hawks was so marked as to leave no room for doubt regarding the utility of the Screech Owl and the harmfulness of the Sharp-shinned Hawk.

With the increase of game preserves, in this country, and the increased destruction of vermin, the Sharp-shinned Hawk must gradually disappear, for the game-keeper is this Hawk's inveterate enemy. Let us hope that the useful and comparatively harmless Hawks and Owls may not suffer from the game-keeper's activity, or for the faults of the three species of true bird hawks, but that such discrimination may be used by the game-keeper, the farmer, and the sportsman, that the real culprits will be the only sufferers.

The Magnolia Warbler (*Dendroica magnolia*)

By Edward B. Clark

Synonym.—Black and yellow warbler.

Description.—*Adult male in spring*: Crown and nape slaty blue; back deep black; black bands on the sides of the head meeting in front and connecting with black of back; superciliary line, cut off by black in front of eye, white; a white spot on under eyelid; rump bright yellow shading into back by yellow or olive-green skirtings; upper tail-coverts abruptly black; wings and tail black with narrow edgings of bluish gray; a large white blotch on wing, formed by tips of middle, with tips and outer edges of greater, coverts; tail feathers, except middle pair, with square white blotches on central third of inner web, below rich lemon yellow, clear on throat and middle belly, heavily streaked with black on jugulum, sides of breast, and sides, the streaks tending to become confluent in two or three large strips on sides of breast, and to form a black patch on lower throat; crissum white; bill black; feet dark brown. *Adult female in spring*: Like male but duller; more olive-green on back; wing-patch separated into two bars by broader black centers of greater coverts; less heavily streaked below. *Both sexes in autumn*: Above olive-green; grayish on head; pale gray on throat; less heavily, or not at all, streaked below. *Young*: Ashy above with heavy olive skirtings on back and nearly concealed black spots; paler yellow below with less streaking; rump and tail as in adult. Length, 4.50-5.25 (114.3-133.3); wing, 2.36 (59.9); tail, 1.91 (48.5); bill, .36 (9.1).

Recognition Marks.—Smaller; below, rich yellow heavily streaked with black in spring; *square* white spots on central third of tail feathers distinctive in any plumage.

Nest.—Of twigs, grasses and weed-stalks, carefully lined with fine rootlets, in coniferous trees, usually three to ten feet high on horizontal branches. *Eggs*, 3-5, white, spotted and blotched with hazel, reddish brown and cinnamon. Av. size, .65 x .48 (16.5 x 12.2).

Range.—Eastern North America west to the base of the Rocky Mountains and casually to British Columbia; breeding from northern New England, New York, and Michigan, to Hudson Bay Territory, and southward in the Alleghenies to Pennsylvania. In winter, Bahamas, Cuba and south through eastern Mexico to Panama.

It is always with a sense of privilege that one gazes upon a bird so beautiful, so exquisite as this. It is passing strange that one of such brilliant hue should desert the tropics and proceed not only to Ohio—that were not so strange—but to gloomy Labrador. Surely he must be a vision glorious in that land of fogs and pines and mosses gray! The bird brings with him something of the languid air of the South, a breath as of magnolia blossoms, and a southern name. For this bird, like two other warblers, the Palm and the Myrtle, receives its name from the favorite tree of its winter home.



MAGNOLIA WARBLER
(*Dendroica maculosa*).
Life-size.

While passing through our borders the Magnolia Warbler is oftenest found moving quietly through the bushes which line the banks of streams or lean over swampy pools in the depth of the forest. If in the latter situation its brilliance seems fairly to dispel the gloom, and if one finds his magnificence fluttering before an insect-laden leaf, his cup of joy is full. But the bird is no recluse and numbers of them join that bright array which consecrates our tree-tops year by year.

The song of the Magnolia is not often heard, but when vouchsafed is clear and musical and fairly distinctive. It may bear a superficial resemblance to that of the Hooded Warbler, but careful comparison will show that it is shorter, weaker, and more varied. It is only the penultimate syllable, into which the bird throws a peculiar quality and turn, that is confusing, *flick, flick, flick, fleetip, or che-weech, che-weech, che-o*. Besides this common form there are many variations whose consideration would scarcely prove helpful.

Red-Shafted Flicker (*Colaptes cafer collaris*)

Length: 12 to 14 inches. To be distinguished from its eastern relative (*C. auratus*) by its red mustache and nuchal band and the red wing and tail shafts.

Range: Rocky mountain region from British Columbia south to Mexico, west to the coast mountains in Oregon and Washington, and through California; largely resident.

Few birds are more widely known than the flicker, as appears from the fact, recorded by Chapman, that in the various parts of the country it appears under no fewer than 124 aliases. Though well known, the flicker is more often heard than seen, its loud call often proclaiming its presence when it is hidden among the trees. As a rule the flicker is shy and in some sections of the country it has good reason to be, since it is accounted a game bird and, as such, pursued for the table.

Though a woodpecker, the red-shaft departs widely from typical members of the tribe both in structure and habits. Notwithstanding the fact that its bill is not well adapted for boring into wood for larvæ, the bird manages to do considerable damage in the west by making holes, in church steeples, school houses and other buildings, to serve as roosting quarters. As it is nowise particular as to its domicile, it is possible materially to increase its numbers by putting up nesting boxes for its accommodation. The bird's subsistence is obtained largely from the ground, where it secures vast quantities of ants, for taking which its tongue is specially adapted; about one-half its food in fact consists of these creatures. The flicker also consumes grasshoppers, crickets, and beetles, but it is so much of a vegetarian that the list of berries and seeds it eats is a long one, though it is not accused of taking domestic fruit.

Shall We Kill Him?

By F. H. Rowley

Once more the sparrow, our ever present, dusty, hard-working little *passer domesticus*, is before the court on trial for his life. Now, the complainant is the League of American Sportsmen, which is planning to enlist the activities of colleges, schools, Boy Scouts, police and fire departments, and all other forces it may be able to command in one determined attack upon him. Nothing less than his extermination among us is the end sought.

Before we all respond to the heroic call of our friends the sportsmen, and set out with gun and trap, and fire and water and poison against this tiny criminal, there are one or two things that are well worth considering. Will an enlightened, educated public opinion sustain a movement that sets young boys killing birds by every possible means that may be devised, even when the birds are sparrows? Must not the character of a child inevitably suffer from the practice of killing? Must it not, this crusade of destruction, blunt his finer sensibilities, lessen his regard for life in all its humbler forms and foster in him the spirit of indifference toward suffering? There is but one answer to these questions. Experience has demonstrated that argument here is excluded. From parents and teachers and editors everywhere there should arise a prompt and positive protest against enrolling the children of the land in any such campaign as has for its object the killing of birds, no matter what the birds are. The bird life of this country is too vitally related to its very existence to run any risk of training the youth in the process of exterminating even an injurious species, should such an one exist. In addition it should be said that there are sparrows, other than the English sparrow, which resemble him sufficiently to make probable the killing of many a bird against which no charge has ever been brought. No, if the sparrow is all his enemies say he is, and if he must be destroyed, then let us entrust his destruction to men designated to the task and not to children.

There is still something more to be said. We know the Department of Agriculture has advocated the trapping, poisoning and shooting of the English sparrow. But even that distinguished body does not know everything, has much still to learn. It has had to change its views many times upon many questions. What are we to do with such facts as these:

Recent investigations carried on by the Biological Survey led to the statement made by that authority, that during the years 1911 and 1912 it was estimated that one brood of young sparrows destroyed at least 2,000 alfalfa weevil in a day.

Prof. R. J. DeLoach, of the Georgia Agricultural Experiment Station, says he witnessed the spectacle of about 1,000 sparrows attacking a field of German millet which had been invaded by several million of the army-worm caterpillars. In approximately forty-eight hours the field had been completely cleaned of the worms.

James Buckland, of London, in a paper published in the Smithsonian Report for 1913, says: "Some years ago the agriculturists of Hungary, moved to the

insane step by ignorance and prejudice, succeeded in getting the sparrow (*passer domesticus*) doomed to destruction. Within five years the country was overrun with insects, and these same men were crying for the bird to be given back to them lest they should perish. The sparrow was brought back and, driving out the hordes of devastating insects, proved the salvation of the country."

Our own Edward Howe Forbush, Massachusetts State Ornithologist, wrote us some time ago, in reply to our question about the sparrow, as follows:

"If we were rid of the sparrows and had our native birds back, no doubt we could attract them into our cities and they would protect the trees, but if now we should destroy the sparrows I suppose that other insects would increase, particularly the geometrid caterpillars, which the sparrow was imported to destroy.

"Personally, I should deprecate very much any widespread effort to destroy the English sparrow, for I think that the bird is now fastened upon us and extermination is impossible. Any popular attempt to destroy the sparrows will result in the destruction of other birds more useful than the sparrow. I should not object, however, to the sparrows being destroyed by trustworthy, reliable citizens in any case where it might seem necessary for the public welfare to have this done."

There is no doubt, in our judgment, from personal observation and conversation with careful observers, that the English sparrow in America is changing his habits and becoming more and more an insectivorous bird. We have watched him destroying the brown-tail and gipsy moths, climbing about fruit-trees searching for insects. This very summer with a flock of over fifty sparrows living about our place, every one of a number of bird-houses on the premises has been occupied by bluebirds and house wrens, and in the trees more robins and vireas, and in the garden more chipping-sparrows have nested than during the past six years. For twenty years we have observed the sparrow with more than usual care. We have never seen him attack a bird of another species. That he is often a nuisance, building his nests over windows and in shutters, even his best friend would not deny. In this, however, he is not a worse sinner than the pigeon. Never were the sparrows more numerous in New Zealand, says Buckland, never were the complaints more bitter against them, and yet never were the harvests so abundant. He concludes, "The good the sparrow does must far outweigh the evil."

We have written thus at length, not because we regard ourselves competent to prove or disprove such a statement as is made in the last sentence just quoted from Buckland, but to call public attention to the fact, first, that this attempt to enlist the youth of the land in a crusade of killing is deserving of a loud protest from all lovers of child-welfare, for the child's sake; and second, that apparently the evidence is not yet all in with regard to the sparrow, and, that before constituting ourselves complainant, lawyer, judge, jury and executioner, we make quite sure the accused is guilty of all the crimes charged against him and is worthy of death.

The Warbling Vireo (*Vireosylva gilva*)

By W. Leon Dawson

Description.—*Adult*: Above, dull ashy, almost fuscous, with the palest possible tinge of olive-green, the latter color brightest on interscapulars, rump, and edgings of secondaries and rectrices; wings and tail fuscous, the primaries with faint whitish edgings; no wing-bars: first primary spurious,—only about a third as long as the others; point of wing formed by third, fourth and fifth primaries; second shorter than sixth; below white with slight tinges on sides,—buffy on sides of head and neck, olive-fuscous on sides of breast, sulphur-yellow on sides of belly and flanks, and sometimes vaguely on breast; lores and space about eye whitish, enclosing obscure, dusky line through eye; bill dusky above, lighter below; feet blackish. Length, 5.00-6.00 (127.-152.4); wing, 2.91 (73.9); tail, 1.94 (49.3); bill from nostril, .30 (7.6).

Recognition Marks.—Warbler size; general absence of positive characteristics,—altogether the plainest-colored bird of the American avifauna.

Nest.—a pensile pouch of bark-strips, grasses, vegetable fibers, and trash, carefully lined with plant-down; hung usually from fork of small limb, at any height. *Eggs*, 3 or 4, white, sparingly and distinctly dotted or spotted, or, rarely, blotched with black umber, or reddish brown, chiefly at the larger end. Av. size, .75 x .55 (19. x 139).

General Range.—North America, in general, from the fur countries to Oaxaca, Mexico. Breeds throughout the greater part of its range.

Boldly quitting the woodland retreats, so dear to all the other vireos, this little warbler makes his home in the long rows of maples and elms which line the streets of village and town, or lead the way to country residences. Because he is clad in Quaker gray there is little need for the singer to show himself, so he remains for the most part concealed in the dense foliage, but he opens here for the passer-by a cool fountain of song, which is doubly refreshing for its contrast with the dusty turmoil of the street below. Unlike the disconnected fragments which the red-eye furnishes, the song of the warbling vireo is gushing and continuous, a rapid excursion over pleasant hills and valleys. The notes are flute-like, tender, and melodious, having, as Chapman says, "a singular alto undertone." All hours of the day are recognized as appropriate to melody, and the song-period lasts from the time of the bird's arrival late in April until its departure in September, with only a brief hiatus in July.

In sharp contrast with the beautiful canzonettes which this bird showers down from the tree-tops, come the harsh, wren-like scolding notes, which it often delivers while searching through the bushes, and especially if it comes across a lurking tabby-cat.

The warbling vireo's cradle is swung where its after life is spent—in the depths of a shade tree. The structure is a little the neatest of them all, being closely woven of grasses and fine bark-strips, and felted more or less compactly



with vegetable downs. The female is a close sitter, sticking to her post even though nearly paralyzed with fear. The male is usually in close attendance and knows no way of discouraging the inquisitive bird-man save by singing with redoubled energy. He takes his turn at the eggs when the wife needs a bit of an airing, and even, it is said, carries his song with him to the nest.

The vireos are frequent victims of the cowbird. The birds seem to realize the imposition that is being practiced upon them, but are not able to eject the foreign egg. Sometimes a false bottom is constructed to hide the bastard product, and sometimes the tainted nest is deserted outright. One such I found which contained only a single cowbird's egg, and that punctured by the outraged vireo.

Bob White

By Daniel M. Henderson

I heard them greet the peep of dawn
From every bush and tree:
Blackbird, bluebird, robin, wren,
Jay, thrasher, chickadee;
Then I heard, from his retreat
Somewhere in the corn or wheat,
Bob White welcoming the morning
And I thought his song more sweet:
"Bob White! Bob White!"
Was that note of bird or sprite,
Bob White?

I have listened in the shadows
To the haunting whippoorwill,
I have heard the rapturous mocker,
Oh, a wealth of sweetness spill!
Yet not these to-day I hear,
But one sound stayed in my ear—
Just the quail's full-throated whistle,
Just his double note of cheer:
"Bob White! Bob White!"
May no gun your fluting blight—
Bob White!

The Canvas-Back (*Marila valisineria*)

By Lynds Jones

Similar to the redhead, but larger, head larger, bill longer, and no evident angle between bill and forehead; head and upper neck reddish brown without purplish gloss, blackening on crown and chin; the sides less heavily waved with dusky; the white bars of upper parts much wider than the dusky (hence entire back conspicuously lighter in tone); upper mandible dusky at base, bluish only between nostril and black tip; iris red. *Adult female*: Similar to that of preceding species, but proportioned like male; bill correspondingly different; feathers of back and scapulars more or less wavy-barred with white. The female redhead is sparingly speckled above with dusky and whitish, but never barred. Length, 20.00-23.50 (508.-596.9); wing, 9.00 (228.6); tail, 2.90 (73.7); bill, 2.35 (59.7); tarsus, 1.75 (44.5).

Recognition Marks.—Mallard size; slope of culmen continuous with forehead; reddish brown head and light canvas back. For detailed comparison with *A. americana* see above.

Nesting.—*Nest* on the ground of marshes and grassy sloughs, of grasses, etc., lined sparingly with feathers. *Eggs*, 6-10, buffy white with a greenish or bluish tinge. Av. size, 2.45 x 1.75 (62.2 x 44.5).

Range.—Nearly all of North America, breeding from the northwestern states northward to Alaska.

"Tell me what you eat and I will tell you what you are" might be resented by a self-respecting human, but it applies pretty accurately to the flavor of ducks. Various writers are wont to extol a bird's flesh as "tender," "juicy," "sapid," "delicious," or to condemn it as "gamy," "rank," "fishy," "unpalatable," according to traditions which prevail locally; so that often the testimony of no two observers will agree as to a duck's fitness or unfitness for the table. The fact is, however, that the flavor of wild meat is pretty much what the feeding of the last week or so has made it, so that it is possible for a single bird to run the whole gamut from "sapid" to "fishy" in a single season. The early canvas-backs were found feeding upon the rank grass, or wild celery, of Chesapeake Bay, and from this circumstance has arisen a most extravagant appreciation of its flesh—or the profession of it—which has pursued the poor duck from Manitoba to the Carolinas, and nearly wrought its ruin. But, as Cones says, "there is little reason for squealing in barbaric joy over this overrated and generally underdone bird; not one person in ten thousand can tell it from any other duck on the table, and then only under the celery circumstance." The pursuit, however, has been so relentless, that there has been little opportunity left for ornithologists to study the species quietly, and recent reports of its nesting in the heavy reeds of North Dakota sloughs serve only to emphasize our comparative lack of knowledge of the habits and home life of the canvas-back.

Exclusively an American species, having nothing in the Old World that



CANVASBACK DUCK.
(*Aythya valisineria*,
 $\frac{1}{2}$ Life-size.

can even be said to represent it, the canvas-back ranges all over North America, and breeds from Upper California, amid the lakes and water courses of the mountains, in eastern Oregon in similar lofty situations, and in some other states on our northern border, to and throughout Arctic regions, probably to the sea.

The places within the limits of the United States suitable for this duck to rear its young unmolested will probably grow fewer and fewer, until in a brief period it will have to rely altogether upon Arctic solitudes for that protection and freedom from intrusion so necessary at this important period of the bird's existence. The bottom of the canvas-back's nest is formed of rushes and grasses, situated in the water, and is then built up with high sides and lined with down and feathers. It is continually being added to while the bird is laying, and when the female is ready to commence incubating it has grown to be considerable of a structure. Eight to ten pale greenish gray eggs are deposited, and the female begins to lay about June.

The canvas-back appears within the limits of the United States during the fall migration, in the month of October. The duties and trials of the nesting season and the rearing of the young broods in the far northern regions are over, and each little family, lusty of wing and robed in a fresh dress, has united itself with some others until the gathering host, making ready for a long southern journey, spreads itself out like some great army preparing to invade an unknown country. The sun has for some time been making his daily rounds in constantly diminishing circles, and the increasing time between his setting and rising with the gradual lengthening of the period of darkness all betoken the coming of the Arctic night. It is time for birds to be on the wing, headed for southern climes. Preparations are made for their departure and much discussion must be indulged in, probably both as to what they expect to see and find in this, to many, terra incognita, and as to the best routes to reach it. Some are present who have made the journey perhaps many times before; wise old heads that have escaped unnumbered dangers and traps set for the unwary, and who have sturdily refused to listen to the charm of the sportsman's well-imitated call—charm he never so wisely—or to be allured into the dangerous neighborhood of his ambush, be his decoys ever so lifelike and competent to deceive. But the majority of that preparing host are young and inexperienced, ignorant of all that is before them, and of the dangerous ways of the world. But they must take their chances, like all the rest of earth's creatures in the great struggle for existence, and the time has come to depart.

With a roar of wings like the sound of many waters, as if actuated by a single impulse, the feathered army rises in the air, and, captained by a few old birds, survivors of many a battle, the return journey commences. With a few preparatory wheels around the vicinity of their summer home, which many of them will never see again, the leaders head to the south, and, at a lofty height, guide the main body at a great speed toward the promised land.

On Puckaway Lake, in Wisconsin, canvas-backs and redheads would always

make their appearance on the 10th day of October. It was a very singular fact, but we could always be certain of seeing some of these ducks at that date; no matter what the weather may have been up to that time, and even if the season had been unusually cold, these birds did not appear before the 10th. The lake contained plenty of wild rice and celery, and before it was closed by ice the canvas-back would become very fat upon this food, and were not surpassed in delicacy of flavor by any shot upon the famed waters of the Chesapeake. Like the redheads and some other diving ducks, the canvas-back keeps out on deep water and rafts together in great numbers, seeking their food at the bottom. Their feet, although large and powerful, are not of much assistance in descending to the depths, but the wings are the bird's chief reliance for propulsion, and it flies under water as it does in the air, and the feet are employed mainly for guiding and altering the course. This method of propelling itself under water is not by any means the sole attribute of the canvas-backs, for not only do many other ducks act in the same way, but different species of water birds, not ducks, also.

The flight of the canvas-back is not probably exceeded in swiftness by that of any other duck, and under favorable circumstances it will doubtless accomplish one hundred miles an hour. It generally flies in a direct line as if it knew exactly where it was going, and often at a great height. Its method of flying resembles very closely that of the redhead, and it moves along in extended lines.

The canvas-back is a brave bird, and fears no enemy of the air, possibly depending in a measure upon its great skill in diving. If a bald eagle comes sailing over a raft of ducks floating on the broad water, as I have often witnessed, the birds will rise as one vast cloud and go circling about, settling after their dread enemy has passed on. But the canvas-back is not in the cloud, nor do the flocks of that bird swell in dimensions, but it keeps quietly about its occupations in company with the swans and geese if any present, utterly indifferent to the movements of the other ducks. The call of the canvas-back is the same harsh, guttural note as that uttered by the redhead, and is usually heard when the birds are gathered together on the water. When flying it is generally silent, although sometimes it will utter this note when approaching decoys or other ducks rafted on the sounds or rivers. This species does not bear many popular names in addition to that at the head of this article. Occasionally it is called "canvas" simply, or white-back and bull-neck, and in the vicinity of New Orleans canard cheval or horse duck.

Although, as I have already said, when this duck has fed for a time on the wild celery its flesh is superior to that of all other fowl, yet, when deprived of this, it is about as poor a bird as flies, not equal in any way to the mallard or other mud ducks that obtain their usual food where they may. It is this fact that makes such a difference in canvas-backs when served on the table. Only those brought from localities where the wild celery grows have any qualities superior to the ordinary run of ducks. It is generally supposed that only

canvas-backs from the Chesapeake are exceptionally fine, and they must be brought from those far-famed flats for their delicacy and flavor to be known and appreciated. But no greater mistake can be made, as there are many places, especially among the lakes in the West, where the wild celery grows in profusion, and the canvas-backs from those localities are equal, in gastronomic qualities, to any fed and killed on the Chesapeake.

It has seemed to me that this species has become much scarcer in the past few years; certainly many places where it used to be abundant in the winter are now almost deserted by this duck; but it cannot be wondered at if it is so, for when we consider the persecutions it suffers from gunners striving to obtain the high price it brings in the market, and the thousands that are shipped to Europe—poor things that have been kept frozen or packed in ice until all the flavor has departed—it is surprising that there are many left. With no effort made to preserve it from extinction, but every kind of scheme employed for its destruction, we must become accustomed to witness the noblest game duck that ever flew gradually disappear from our land.

Phoebe

It is a wee sad-colored thing
As shy and secret as a maid
That, ere in choir the robins sing,
Pipes its own name like one afraid.

It seems pain-prompted to repeat
The story of some ancient ill,
But *Phoebe! Phoebe! sadly sweet*
Is all it says, and then is still.

It calls and listens. Earth and sky,
Hushed by the pathos of its fate,
Listen: no whisper of reply
Comes from its doom-dissevered mate.

Phoebe! is all it has to say
In plaintive cadence o'er and o'er,
Like children that have lost their way,
And know their names, but nothing more.

—James Russell Lowell.

The Tree Swallow (*Iridoprocne bicolor*)

By I. N. Mitchell

Synonym.—White-bellied swallow.

Description.—*Adult Male*: Above, lustrous steel-blue or steel-green; below, pure white; lores black; wings and tail black, showing some bluish or greenish luster; tail slightly forked. *Female*: Similar to male, but duller. *Immature*: Upper parts mouse-gray instead of metallic; below whitish. Length about 6.00 (152.4); wing 4.57 (116.1); tail 2.19 (55.6); bill from nostril .25 (6.4).

Recognition Marks.—Aerial habits; steel-blue or greenish above; pure white below.

Nest.—In holes in trees or, rarely, in bird houses, plentifully lined with soft materials, especially feathers. *Eggs*: 4-6, pure white,—pinkish white before removal of contents. Av. size, .75 x .54 (19.1 x 13.7).

Range: North America at large, breeding from the fur countries south to New Jersey, the Ohio valley, Kansas, Colorado, etc.; wintering from South Carolina and the Gulf States southward to the West Indies and Guatemala.

One swallow does not make a summer, but a little twittering company of them faring northward makes the heart glad, and fills it with a sense of exultation as it responds to the call of these care-free children of the air. This remark applies to swallows in general, but particularly to tree swallows, for in their immaculate garb of dark blue and white, they seem like crystallization of sky and templed cloud, grown animate with the all-compelling breath of spring. They have about them the marks of high-born quality, which we cannot but admire as they spurn with a wing-stroke the lower strata, and rise to accept we know not what dainties of the upper air.

The tree swallow is a lover of the water, and in our latitude he is detained for the summer only by the larger bodies, especially the reservoirs. In the summer of 1902 they were found to be very common at the Lewiston Reservoir, where they nested in the numerous stubs,—the water-killed remnants of previous forests. The birds are not themselves able to make excavations in the wood, but they have no difficulty in possessing themselves of other birds' labors. Old holes will do if not too old, but I once knew a pair of these swallows to drive away a pair of flickers from a brand new nesting-hole, and to occupy it themselves.

Among the writer's earliest oölogical recollections are those of a little stub sticking out of the muck and saw-grass of an Illinois swamp. A neat-looking hole about eight feet up prompted instant attack. A hand was about to enter the coveted approach, when crack! went the stump, and down went the small boy with the stub on top of him. But the mud was as soft as a feather-bed and my first thought was for the eggs. There they were, four delicate pink beauties, spilled out upon the black mud, but unbroken. The nest cavity was filled within three or four inches of the entrance with chicken feathers, and the sides were lined with them to the very edge of the hole. Taking the least possible toll, one egg, I



TREE SWALLOW.
(*Tachycineta bicolor* Vieill.)
Life-size

carefully replaced the others, then dragged the stub several rods to an old fence, where I bound it fast with wire to an upright post. The parent bird accepted the proffered amends; the set was completed, and a handsome brood raised.

In many localities tree swallows are prompt tenants of bird houses. A pair once built their nest in a sort of tower attic, just inside of a hole which a flicker had pierced in the ceiling of an open belfry of a country church. When in service the mouth of the swinging bell came within two feet of the brooding bird. One would think that the swallows would have been crazed with fright to find themselves in the midst of such a tumult of sound; but their enterprise fared successfully, as I can testify, for at the proper time I saw the youngsters ranged in a happy, twittering row along the upper rim of the bell-wheel.

As the seasons go, its arrival may be pretty safely predicted for the middle of April.

Several seasons ago, eighteen pages had been torn from the April daily calendar without the arrival of our favorite swallow.

A wren box had been mounted in the garden with its doorway no larger than a quarter of a dollar as regularly prescribed by all lovers of wrens.

Nearer the house, the box set apart for the swallows had been swept and garnished. The bluebirds had looked it over as usual, had appeared satisfied with the arrangements and, as usual, had departed to await the arrival of the proper time for the beginning of house furnishing.

On the morning of the nineteenth, we realized the uncertainties of human planning, for there in the garden was a pair of white-bellied swallows persistently trying to force an entrance into the wren box.

They were give ample time for discouragement and discovery. If they were aware of the presence of the box intended for them, they ignored it completely. To save the birds from wearing away their plumage in vain efforts to go through a hole much too small, we, the discouraged ones, went to the box, lowered it, whittled out the doorway to the proper size, returned the pole to its place and had the pleasure of seeing the waiting swallows take immediate possession. In their case there was no dallying. They proceeded to hold their claim by living upon it and making improvements leisurely, to be sure, but still they were on hand to drive away the watchful sparrow and later the envious bluebirds. It was a great pleasure to have them about the premises.

Their twittering was always a joyful note, and we never tired of watching the spotless white and the brilliant metallic greens and blues of their plumage, their graceful movements and their pretty ways. Their dispositions matched their coloring. They were usually mild, attentive, even affectionate; but when the sparrows or the bluebirds alighted on their roof-tree, the cold steel in their natures asserted itself. How they did fight for possession of that simple chalk-box summer cottage! Even to clinch and falling to the ground where, for some seconds they rough-and-tumble like cats and dogs—or boys. But in no case, either that year or other years, when they nested in the garden, were they driven from their holding after they had fairly taken possession and had begun to build.

The tree swallow, like the purple martin, takes readily to civilization and may be had by putting up a box a little before time for their return from the south.

To insure success, however, the sparrows must be kept from pre-empting the box.

In the vast stretches of country in the United States and Canada where the swallow is common and the homes of men few and very far apart, the bird must depend upon such holes as it can find. Deserted woodpecker holes are most commonly used, but any hole, hollow posts, rails, or even holes in banks of earth are appropriate.

Like its relatives, this swallow feeds upon insects and is therefore a desirable tenant in the garden or on the farm. It is especially fond of locusts but also eats large numbers of click beetles, chinch bugs, squash and cucumber beetles, crane flies, house and stable flies, winged plant lice, and many other insects that levy their tax upon the products of farm and garden.

The Nighthawk and Its Ways

By C. L. Chamberlin

The Nighthawk is really not a Hawk at all and does not greatly resemble one except in its quick flight when in pursuit of its food. You have noticed this dusky-gray bird, a trifle larger than a robin, flitting about hither and thither in the early evening, securing its food, the larger insects of the upper air. It is seldom seen except in the evening, although on rare occasions it will appear on dark, cloudy afternoons.

The Nighthawk is a uniform dull-gray in color with a white spot on each wing. The male is further adorned by a white band across the tail. The color makes the bird extremely difficult to distinguish at night except when it is flying and the body appears outlined against the sky.

Although this bird always appears in flight high up in the air, it lays its eggs in any small depression on the ground, never taking the trouble to construct a nest. The two grayish colored eggs are hardly visible and the absence of any nesting material renders the nest one of the most difficult of all to locate. The bird seeks a further protection for its nest by resort to that well-known trick of several species by fluttering from the nest when one approaches too near and half-flying, half-hopping away as if badly crippled. By this action it leads one to attempt to pick it up, but it always manages to keep just out of reach without making too great an effort till finally at a safe distance it rises and flies away entirely recovered from its apparent injuries. Unless one marks his position unusually well when the old bird first rises, it is very difficult to return to the place near which the eggs will be found. But one should not pay too close attention to the eggs or even the little birds after they are hatched, for the Nighthawk possesses the most

unusual trait of leaving the nest that has been handled and of carrying the eggs or young birds to a new location, using its great mouth for the purpose. The bird's habit of seizing flying insects while in full flight itself and swallowing them while in motion requires a large mouth with which to make sure of its prey, and this is well fitted in that respect.

As stated, the Nighthawk rarely flies in daylight. One such flight was observed a few years ago on a rainy afternoon in mid-summer when suddenly a great flock, apparently numbering hundreds, appeared and flew across the sky from north to south and returned, making their well-known sudden side flights after insects, but keeping largely in the one direction. After twice crossing the sky in this way they seemed to continue on and to disappear entirely from sight in the locality where observed. This flight in flocks is very unusual, as each bird seems to be looking after its own affairs even though a dozen or more be in sight at one time during a summer evening.

The Nighthawk somewhat resembles the Whip-poor-will in size and color as well as in its habit of appearing only at night. By some people they are mistaken for the same bird, but by scientists they are classed in entirely different bird "families." The Whip-poor-will is not a bird of extended flight and is rarely seen to fly higher than the top rail of a wood-lot fence or into a low shrub.

The only sound the Nighthawk is capable of making is a sort of hiss or squeak and a deep, hollow sound likened to that produced by blowing across the mouth of a large empty bottle. It is an interesting bird to watch and a useful one in its habits of securing food.

The Song of Birds

The birds of morning rise and shake
The music from their souls again;
I hear them in the tangled brake;
They warble down the shadowy glen;
And still to me
They seem to be
Forever fluting out the call,
"Come up! Come up!
The royal feast
Is spread for man and bird and beast,
With peace on earth, good will to all."

—*Benjamin S. Parker.*

The Hooded Merganser (*Lophodytes cucullatus*)

By C. Hart-Merriam

Length: 17 to 19 inches.

Range: Breeds from central British Columbia, Great Slave Lake, central Keewatin, central Ungava, and Newfoundland south to southern Oregon, northern New Mexico, southern Louisiana, and central Florida; winters from southern British Columbia, Utah, Colorado, Nebraska, Illinois, Indiana, Pennsylvania, and Massachusetts south to Lower California, Mexico, and the Gulf States.

This, the smallest and most beautiful of the mergansers, ranges from Alaska to Mexico, and formerly was abundant in the East, where it nested in many states, including New England. Of late years it has diminished greatly in numbers, as would be expected of a bird of its habits. Unlike its near relatives, it prefers still-water ponds and rivers, and is often found in company with the wood duck. Its flesh is said to have little of the unpalatable fishy flavor of its congeners, and this would seem to imply a more varied diet, including probably seeds and grasses. Nevertheless, nature did not endow the merganser with the serrated bill of its kind without a purpose, and its skill in diving and seizing its finny quarry proves that fish, or at least aquatic creatures of some sort, are natural food. The hooded merganser nests in hollow trees, sometimes thirty or more feet up, and the wonder is how the tiny ducklings find their way to the nearest water, as they certainly do in a very few hours after emerging from the egg. Sometimes the mother may act as a common carrier for her brood, and again, when the height is not too great, the ducklings may drop to the ground or water as the case may be.

This smaller species is rather the most common of the group with us, being not infrequently found during migrations in pairs or small groups upon the rivers and ponds. It is a master diver, and if it has room enough, is more apt to seek to escape from sudden danger by diving and hiding, than by flight. Although its flesh is not highly prized, it suffers periodical persecution along with everything remotely resembling a duck. It has, however, the occasional advantage of being able to dodge at the flash of a gun. Besides, if shot, it has about nine chances of escaping the pot, through its marvelous powers of hiding, utilizing for this purpose the exposed roots of river banks, or even, in extremity, clinging to some object in the bottom of the stream.

There are no recent accounts of the nesting of this bird within the limits of the state, but its present occurrence during the breeding season is well within the bounds of possibility. Like the Wood Duck, it selects for a nesting site a hollow tree or stub in some secluded spot. Dr. Brewer tells of an instance, in the neighborhood of the St. Croix River, in Maine, where the claims of the two birds came into conflict. "Several years ago Mr. Boardman's attention was called to a singular contest between a female Wood Duck and a female of the Hooded Merganser for the possession of a hollow tree. The two birds had been observed for several days contesting for the nest, neither permitting the other



to remain in peaceful occupancy. The nest was found to contain eighteen fresh eggs, of which about a third belonged to the Merganser; and as the nest was lined with her own dark-colored down, it appeared probable that this bird was the rightful owner of the premises."

The Titmouse

This poet, though he live apart,
Moved by his hospitable heart,
Sped when I passed his sylvan fort.
To do the honors of his court,
As fits a feathered lord of land:
Flew near, with soft wing grazed my hand,
Hopped on the bough, then darting low
Prints his small impress on the snow.
Shows feats of his gymnastic play,
Head downward, clinging to the spray.

'Tis good-will makes intelligence.
And I begin to catch the sense
Of my bird's song: "Live out of doors
In the great woods, on prairie floors.
I dine in the sun; when he sinks in the sea,
I, too, have a hole in a hollow tree;
And I like less when summer beats
With stifling beams on these retreats,
Than noontide twilights which snow makes
With tempest of blinding flakes."

I think old Cæsar must have heard
In northern Gaul my dauntless bird,
And, echoed in some frosty wold,
Borrowed thy battle-numbers bold.
And I will write our annals new,
And thank thee for a better clew,
I, who dreamed not when I came here
To find the antidote of fear.

—*Ralph Waldo Emerson.*

The Tanager People

By Joseph Grinnell

It is a large tribe, of numerous species in America, but the scarlet tanager alone may well be termed the Red Man of the forest. Native of the New World, shy, a gypsy in his way, harmless to agriculture, a hunter by nature, fascinating to all eyes that light on him.

It is as if Nature had a surplus of red and black the day she painted him, and was determined to dip her brush in nothing else. This contrast of color has made him one of our most familiar birds. But, as with many another of striking hue, the scarlet tanager has an indifferent song. Among our flowers like the scarlet geraniums and hibiscus, we do not look for the fragrance that distinguishes the pale violet or wild rose. It is as if the bright tint of bird or blossom is sufficient of itself, and nature would not bestow all virtues upon one individual.

Still the musical qualities of this tanager are not to be despised. His few notes may be almost monotonous, but they are pensive, even tender when addressed to his dear companion, for whom his little breast holds warm affection. She, too, at nesting-time, utters the same pensive note, and the two may be noticed in the treetops, whispering to one another in low tones.

It is not for his song, therefore, that we seek the bird, but hearing the song, we would see the singer. And who can blame us? We love the deeper tints of sunset and sunrise, the red and yellow of autumn leaves, the red glow of the prairie fire, the tint of the Baldwin apple and the sops o' wine. A tree of dull green apples in the orchard, though of finer flavor, will be neglected, more especially by the "wandering boy," for its crimson-cheeked neighbor of indifferent relish. The red apples of the naked winter bough, left on purpose for Jack Frost and the birds to bite, are said to allure the latter before the paler fruit of the next tree is disturbed.

Therefore, when a nature-lover wanders in to the woods in dream mood and the scarlet tanager flits above him amid the green of the foliage, the thrush and the sparrow are forgotten.

The tanager is discreet by nature, for it is as if he knows that by glimpses only is he best appreciated. Were he less retiring, as bold in habit as in color, sitting on the roofs and fence-posts, swinging the nest pendant from boughs, like the oriole, he would be less fascinating. But the tanager is seldom more than half seen; he is detected for an instant, like a flash, and disappears.

It is with the eye as with the hand. We would hold in the grasp of our fingers what we covet to touch or own. And the eye would retain in its deep fortress, if only for a moment, the tint it feasts on. More especially is this the case if the thing we would hold or see is transitory by nature.

So when we sit down on a half-decayed log bedecked with toadstools, and hear the note of a scarlet tanager overhead, we listen and are moveless. It is repeated, and if we are unacquainted with the bird we may think him to the right

of us. Actually he is on the left, being endowed with the gift of ventriloquism. By this gift or attainment the beautiful creature eludes his human foes. For foes the tanager surely has, the more's the pity! Not content to adore the bird as part and parcel of generous nature, there are those who would pay their homage to the wings only, set among feathers and plaited straw. Such lose the fine art of tenderness. The face that would pale at sight of a brown mouse shines with pride beneath a remnant of red plumage literally dyed with the life-blood of their original owner.

Well, let Angelina's hat pass for what it is worth to her. It is no more than the redbirds have had to submit to all their life history. There isn't a savage tribe but has made use of bright feathers for dress, either in skins or quills. The dark-skinned native is "dressed for church" if he wear a single feather tuft in his scalp-lock, or a frail shoulder-cape of crimson breasts, stripped from the bird in the bush.

It may be the tanager has a sort of dull instinct to hide himself on this account in the deep foliage, deeming it the better part of valor to keep out of harm's way when a nature-lover sits on the toadstool-bedecked log to watch for him.

His mate, of dull greenish yellow, has less enemies in the disguise of admirers, and *her* little heart has no call to flutter when the so-called nature-lover haunts the woods. She goes on with her nest-building on the arm of a maple or even lonely apple tree, making haste, for well she knows the season is short in which to raise their single brood. By the middle of August they must be off, have the wings of the young grown sufficient strength; and yet the old birds only arrived from their warmer clime in the South when May was half over, or later.

Like the grosbeak's, the tanager's nest is loosely built of twigs and stalks, transparent from below, as if ventilation were more necessary than softness. The dull blue eggs, spotted with brown or purple, may be distinctly seen from beneath when the sun is shining overhead. But why worry the mother bird by long gazing? She is in great distress. Were the ear of the nature-lover properly tuned he would understand her to be saying, "They're mine, they're mine. I beg, I beg. Don't touch, don't take."

But in due time the young are juveniles, not nurslings, and they leave the nest, too soon the worse for wear on account of its careless build. At first the thin dress of the young is greenish yellow, like the mother, and they may pass unnoticed amid the late summer foliage. The male juveniles, during their first year, somewhere change to brighter hues in spots and dashes of red and black, as if their clothes had been patched with left-overs from their fathers' wardrobes. The fathers themselves, before they fly to the warm South, drop their scarlet feathers, like tatters, amid the ferns and blueberries, and girls pick them up for the adorning of doll hats. No merrier sight, and none more innocent of character, than this of little girls searching for what is left of the beautiful summer visitor, picking up, as it were, the shreds of his memory. These scarlet feathers, together with those of the summer yellowbird, placed in layers or helter-skelter in a case

of gauze, make a fairy pillow for winter times, pretty to look at. They come with thistle-down and milkweed tassels, and sumach droppings and maple leaves, and the first oozing of spruce gum in the woods. Yes, and beechnuts and belated goldenrod, and the first frosts that nip the cheek of the cranberry in the bog.

And the huckleberry patch is littered with the tiny plumes, for tanagers love the huckleberries that leave no stain on their greenish yellow lips. These huckleberries are their chief food in late berry-time, coming, as they do, when the juveniles need a change in their meat diet before the long flight ahead of them. Up to this date they made good, square meals from fat beetles and other insects big enough to "pay for catching." That bumblebees and wasps are endowed with sharp points in their character does not forbid the use of them for tanager food; though it is presumed that the stings are either squeezed out, or the insect killed, before it is fed to the nestlings, as we have noticed in the case of the phœbes.

In these late summer days the singer punctuates his song often and long, for he must recuperate for his autumn journey. More than this, he must protect his young ones. He therefore loses the shyness of spring, and follows the juveniles about, feeding them and teaching them to shift for themselves, and protecting them with word and sign. His whole care is for his family, and hard is a cruel world indeed whose human inhabitants can molest him. His scarlet cloth is forgotten. He will follow his young even into captivity, and there feed them through bar or window. But not a fascinating prisoner is the tanager; one grows accustomed to his bright coat, and as it is seen against the pane in winter-time, contrasting with the whiteness of the snow, seems to reproach the hand that imprisoned it. When one stops to think of it, scarcely a bird in captivity, unless it be the canary to the manner born, gives the satisfaction and amusement anticipated. It is the going and coming of the wild birds that make more than half the fun. The sudden surprise of spring; the reluctant departure of autumn, with the hope of intermediate days—there is charm in all this keeping of Nature's order.

Well, good by, sweet scarlet tanager. Sing us back your farewell note of "Wait, wait." We shall see you again when the early cherries are ripe, if not sooner. The beetles and bumbles and the grasshoppers will be watching out for you, and the terrible hornet shall double his armor-plate to suit the strength of your strong beak. It will be of no avail for the big black beetle to hide beneath the iron kettle he carries on his back, and the bum of the big, yellow bumblebee will serve only as its call-note, while the broad sword of the hornet will have no time to unsheath itself at sight of you. Good-bye, tanager.

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